

KELLER AVENUE PROJECT SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT REPORT

OAKLAND, CALIFORNIA

PREPARED FOR:
CITY OF OAKLAND
PLANNING DEPARTMENT

SCH# 79052405



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File No. ER82-30
Ref. No. _____

City of Oakland
Oakland, California

ER-12

SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT REPORT FOR:
Keller Avenue Property
California Environmental Quality Act (CEQA)

RELEASE OF REPORT FOR PUBLIC REVIEW

The City of Oakland is hereby releasing this Supplemental Draft Environmental Impact Report (EIR), finding it to be accurate and complete and ready for public review. Members of the public are invited to respond to the EIR. Comments should focus on the sufficiency of the EIR in discussing possible impacts on the environment, ways in which adverse effects might be minimized, and alternatives to the project in light of the EIR's purpose to provide useful and accurate information about such factors. Please address all comments to the Oakland City Planning Commission, 6th Floor, City Hall, 1421 Washington Street, Oakland, California 94612. Comments should be received no later than March 23, 1983.

☒ The City Planning Commission will conduct a Public hearing on the Draft EIR on March 23, 1983 at 2:00 p.m. in Room 115, City Hall.

☐ After all comments are received, a final EIR will be prepared and considered for acceptance by the City Planning Commission on _____ at _____ in Room 115, City Hall.

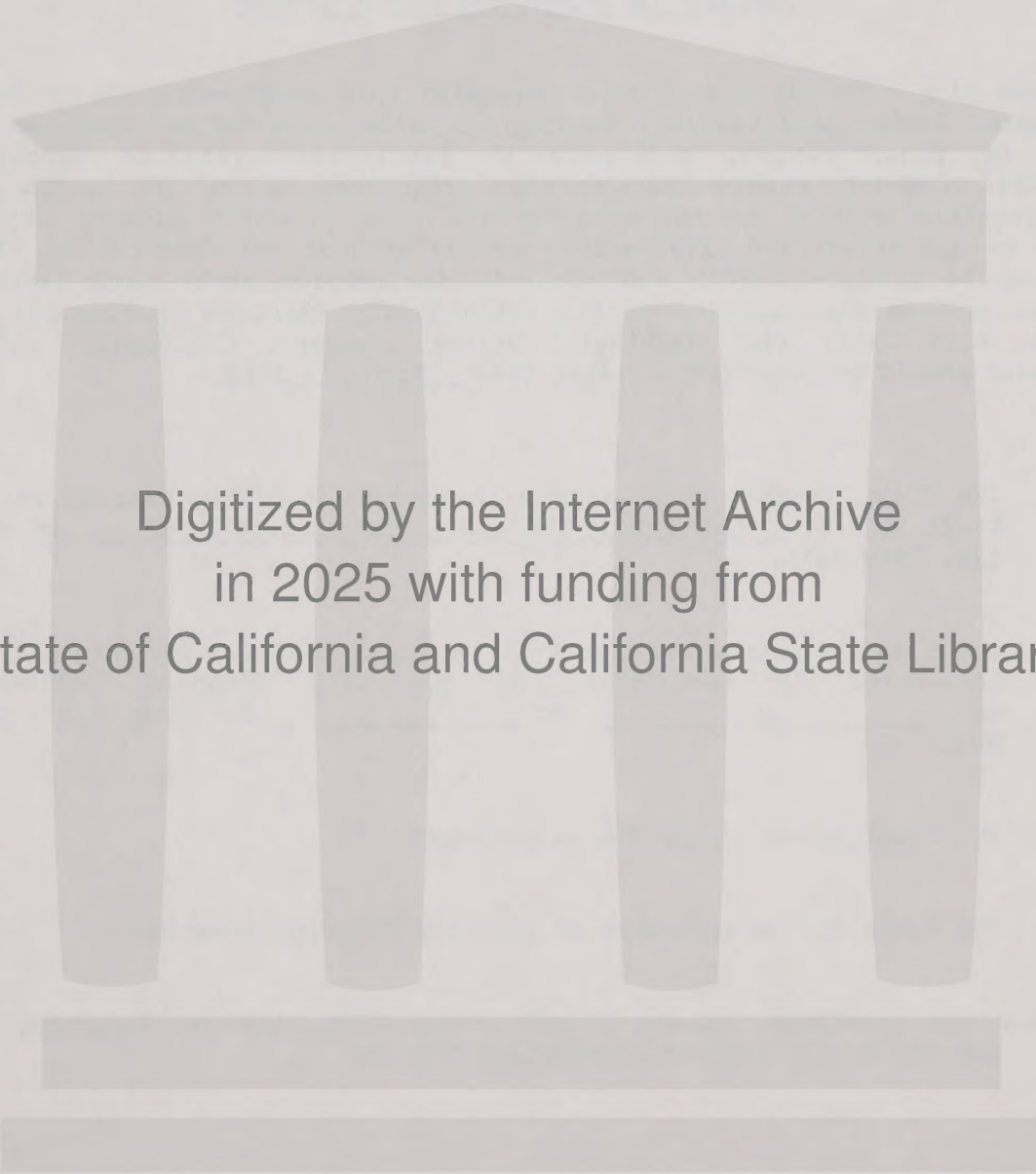
☒ The Supplemental Draft EIR is attached.

☐ The Draft EIR is available at the City Planning Department.

If you have any questions, please telephone the City Planning Department at 273-3911. Ask for Willie Yee, Jr., Associate Planner.

NORMAN J. LIND
Director of City Planning

DATE: February 12, 1983



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Supplemental Draft

Environmental Impact Report

Keller Avenue Project

Prepared for:
The City of Oakland

Prepared by:
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Sch #79052405
Job # R-456

File No. ER82-30
Ref. No. _____

City of Oakland
Oakland, California

ER-11

DRAFT ENVIRONMENTAL IMPACT REPORT FOR:
Keller Avenue Property
California Environmental Quality Act (CEQA)
SUMMARY

A. GENERAL INFORMATION

Project Title : Keller Avenue Property
Location : Keller Avenue, north of Oak Knoll Naval Hospital
Project Sponsor: W.S.I. Building Company, Inc.
Address : 140 Mayhew Way, Suite 800, Pleasant Hill, California 94523

B. PROJECT DESCRIPTION:

See Section 3.0, page 6

C. SUMMARY OF ENVIRONMENTAL CONSEQUENCES OF THE PROJECT:

See Section 1.0, page 1

D. POSSIBLE MITIGATION MEASURES TO MINIMIZE ANY ADVERSE EFFECTS OF THE PROJECT:

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Geology, Soils, and Seismic Risk	10	Economics	13
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Public Facilities, Utilities,	13	Visual	18
and Services		Transportation	35
Demography	13	Energy	55

E. AGENCIES, ORGANIZATIONS, AND INDIVIDUALS CONSULTED:

See Section 9.0, page 66

F. PUBLIC AGENCIES HAVING JURISDICTION BY LAW OVER THE PROJECT:

City of Oakland

G. PRELIMINARY DRAFT EIR PREPARED BY:

City of Oakland, Planning Department
1421 Washington Street
Oakland, California 94612

DATE COMPLETED: February 21, 1983

Report Supervisor:
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1 1.0 SUMMARY

2

3 1.1.0 Proposed Action

4

5 The proposed action is the approval of a Planned Unit
6 Development plan. The original plan was for fifty-six
7 (56) detached dwelling units plus a 5.4-acre commercial
8 area on the project site. However, the Alternative sec-
9 tion of the Caballo Hills EIR discussed the impacts of
10 alternative uses ranging from all commercial to mixed
11 commercial and residential to a 256 all residential alter-
12 native. The current plan is for 224 residential condo-
13 minium units, 16 apartment units, an 8,500 square foot
14 mini-market, 6,000 square feet of convenience shops,
15 24,000 square feet of professional offices, and a new
16 alignment for the proposed Campus Drive.

17

18 1.2.0 Environmental Setting

19

20 The site is currently vacant and in its natural state.
21 However, the approved development plans for the adjacent
22 Ridgemont development call for the deposit of 1.6 million
23 cubic yards of fill on the Keller Avenue Project site.
24 Therefore, the existing flora and fauna of the project
25 site will be changed in the near future.

26

27 The land surrounding the project site has either been
28 developed or is in the process of being developed. Aside
29 from the Oak Knoll Naval Hospital, which is south of the
30 project site across Keller Avenue, the land use surround-
31 ing the project site is generally residential. Necessary
32 public facilities and services, along with utilities, are
33 located nearby and are available to the proposed project.

34

35 The Oakland General Plan and Zoning Ordinances allows the
36 proposed use.

1.3.0 Environmental Impacts and Mitigation Measures

Summaries of the environmental impacts and mitigating measures for the topics of vegetation, wildlife, geology, soils, seismic risk, land use, public facilities, public utilities, public services, demography, historic and archaeologic resources, and economics are found on pages 4-7 and 163-171 of the Caballo Hills EIR. Other environmental impacts of the proposed project and possible mitigating measures are summarized below.

Impacts	Mitigation
Acoustics	
o By 1990 the noise level outside the proposed residences nearest to Keller Avenue may exceed the level (60 dBA) beyond which the California State Office of Noise Control requires that interior noise levels be reduced to 45 dBA through the use of mitigating measures.	o There are several mitigating measures which could be incorporated into the building design to decrease interior noise levels to 45 dBA. Mechanical ventilation for these units would allow the windows to be closed, thus reducing interior noise levels to 45dBA.
o Noise caused by construction could be annoying to the adjacent community if it occurs in the early morning or in the evening.	o Construction should be restricted to the hours of 8:00 a.m. to 5:00 p.m. on weekdays, and construction equipment should be adequately muffled and maintained.
Hydrology	
o Although the existing character of the creek will be altered significantly due to the approved grading plan, the proposed project does little to change the anticipated runoff. In addition, a permanent scouring prevention basin will be constructed	o No mitigating measures are required, except for maintenance of the scouring prevention basin and a comprehensive erosion and sediment control plan which will be required by the City through its permit review process.

	Impacts	Mitigation
1		
2		
3	allowing the large scour-	
4	contributing sand and	
5	gravel to settle out of	
6	the creek discharge pri-	
7	or to entering the main	
8	conduit. This should	
9	help the present erosion	
10	problem of the pipe	
11	downstream.	
12		
13	Visual	
14		
15	o If the project is imple-	o A comprehensive landscap-
16	mented, the visual char-	ing program is suggested.
17	acter of the project	
18	site will change. How-	
19	ever, due to the design	
20	of the project, it is not	
21	anticipated that there	
22	will be any significant	
23	negative visual impacts.	
24		
25	Transportation	
26		
27	o If the project is imple-	o Stop signs will be re-
28	mented, traffic volumes	quired. Acceleration
29	along Keller Avenue and	lanes and left turn
30	Campus Drive will	lanes will be required.
31	increase.	
32		
33	o If the main gate for Oak	o A traffic signal may
34	Knoll Naval Hospital is	eventually be required.
35	moved to Keller Avenue,	
36	a traffic signal may be	
37	warranted at the entrance	
38	of the residential por-	
39	tion of the project site.	
40		
41	Energy	
42		
43	o If the project is imple-	o Various techniques are
44	mented, significant	identified which can
45	amounts of energy will be	help reduce the future
46	used by construction	energy requirements.
47	activities, future occu-	
48	pants, and transportation	
49	to and from the site.	
50	However, the amount of	
51	energy that will be used	
52	is not unusual for this	
	sized new development.	

1 2.0 INTRODUCTION

2

3 The Keller Avenue Project site contains 34.6 acres. The
4 Ridgemont Development Company proposes to construct a
5 project consisting of approximately 224 condominium units,
6 16 apartment units, an 8,500 square foot mini-market,
7 6,000 square feet of convenience shops, and 24,000 square
8 feet of professional offices. In addition, the applicant
9 proposes to realign the southern end of Campus Drive at
10 Keller Avenue.

11

12 The Caballo Hills EIR, which was prepared and certified by
13 the City of Oakland in 1979, included this project site.
14 The development plans for the Ridgemont Project (now
15 called the Ridgemont project) consisted of 350 dwelling
16 units on 680 acres. Fifty-six (56) of those dwelling
17 units were planned for an area included within the Keller
18 Avenue Project site. The Alternatives section of the
19 Caballo Hills EIR also discussed several alternative uses
20 for the Keller Avenue parcel ranging from an all commer-
21 cial use, mixed commercial and residential use, and an all
22 residential use that included 256 housing units.

23

24 Section 15067.5 of the Guidelines for Implementation of
25 the California Environmental Quality Act (CEQA) of 1970
26 allows for the preparation of a supplement to an EIR if
27 only minor additions or changes are necessary to make the
28 previous EIR adequately address the project. The City of
29 Oakland, as lead agency, has reviewed the proposed Keller
30 Avenue Project and has determined that the Caballo Hills
31 EIR adequately addresses impacts connected with air qual-
32 ity, climate, vegetation, wildlife, archaeological and
33 historic resources. These areas need not be studied
34 further and the Caballo Hills EIR is incorporated here by
35 reference. The page numbers of the specific section from

1 the Caballo Hills EIR are referenced in this Supplemental
2 EIR in Section 4.0, Environmental Analysis.

3

4 This Supplemental EIR is focused on Acoustics, Hydrology,
5 Visual, Transportation, and Energy, as determined by the
6 City of Oakland's Initial Study (See Appendix A).

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1 3.0 PROJECT DESCRIPTION

2

3 3.1.0 Location

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5 The Keller Avenue Project is in the City of Oakland and
6 County of Alameda (see Figure 1). Oakland is located on
7 the easterly shore of San Francisco Bay and is a major
8 industrial, commercial, and shipping center.

9

10 The eastern border of Oakland is formed by a series of
11 ridges, valleys, and peaks known collectively as the
12 Berkeley and San Leandro Hills. The Keller Avenue Project
13 is located on the western face of these foothills.

14

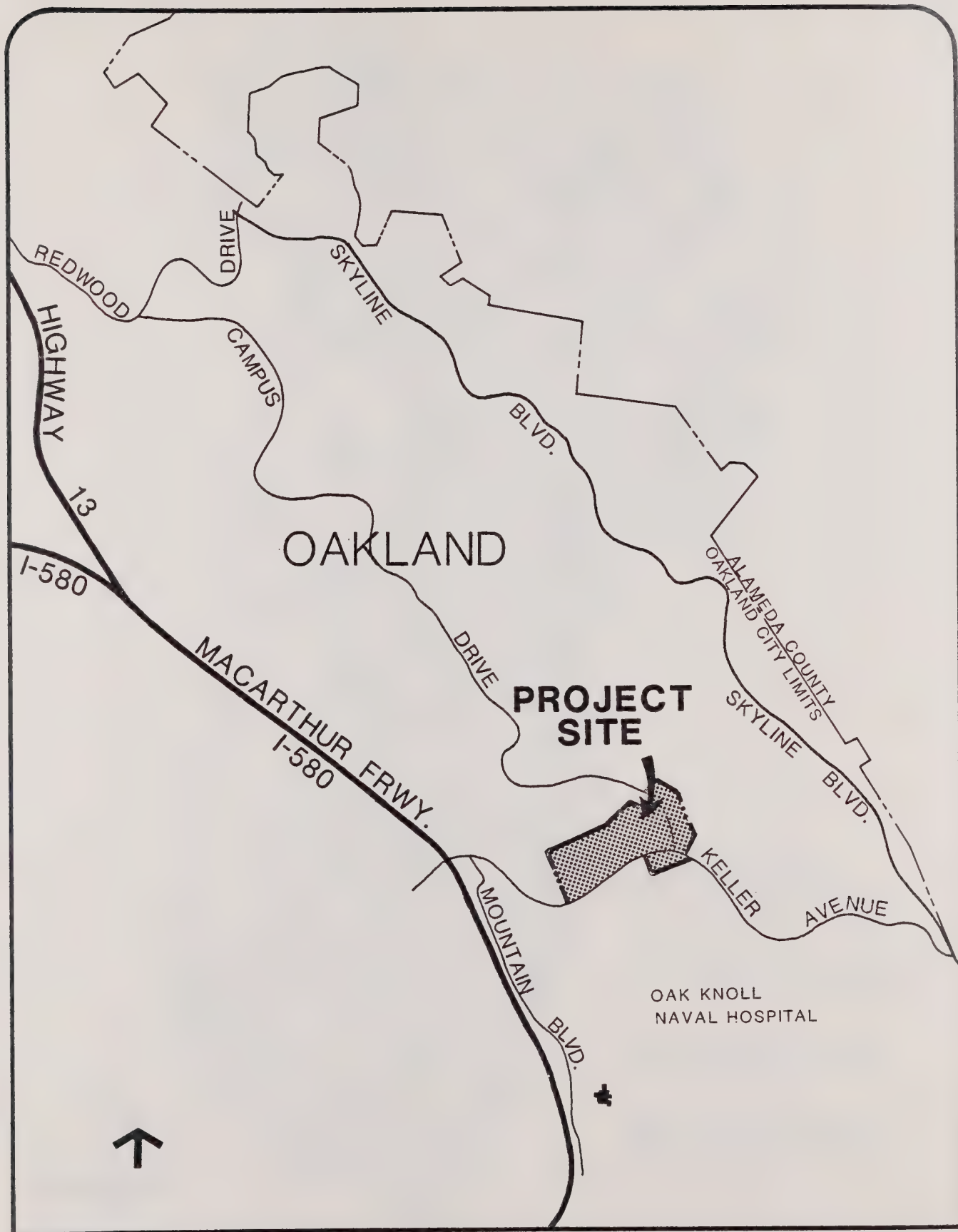
15 Keller Avenue forms the southeast boundary of the project
16 site. Oak Knoll Naval Hospital is located across Keller
17 Avenue from the site; an existing residential area is
18 located adjacent to the western boundary of the project
19 site; and a future residential area is located adjacent to
20 the northern boundary of the project site. Interstate 580
21 lies approximately one-half mile west of the project site.

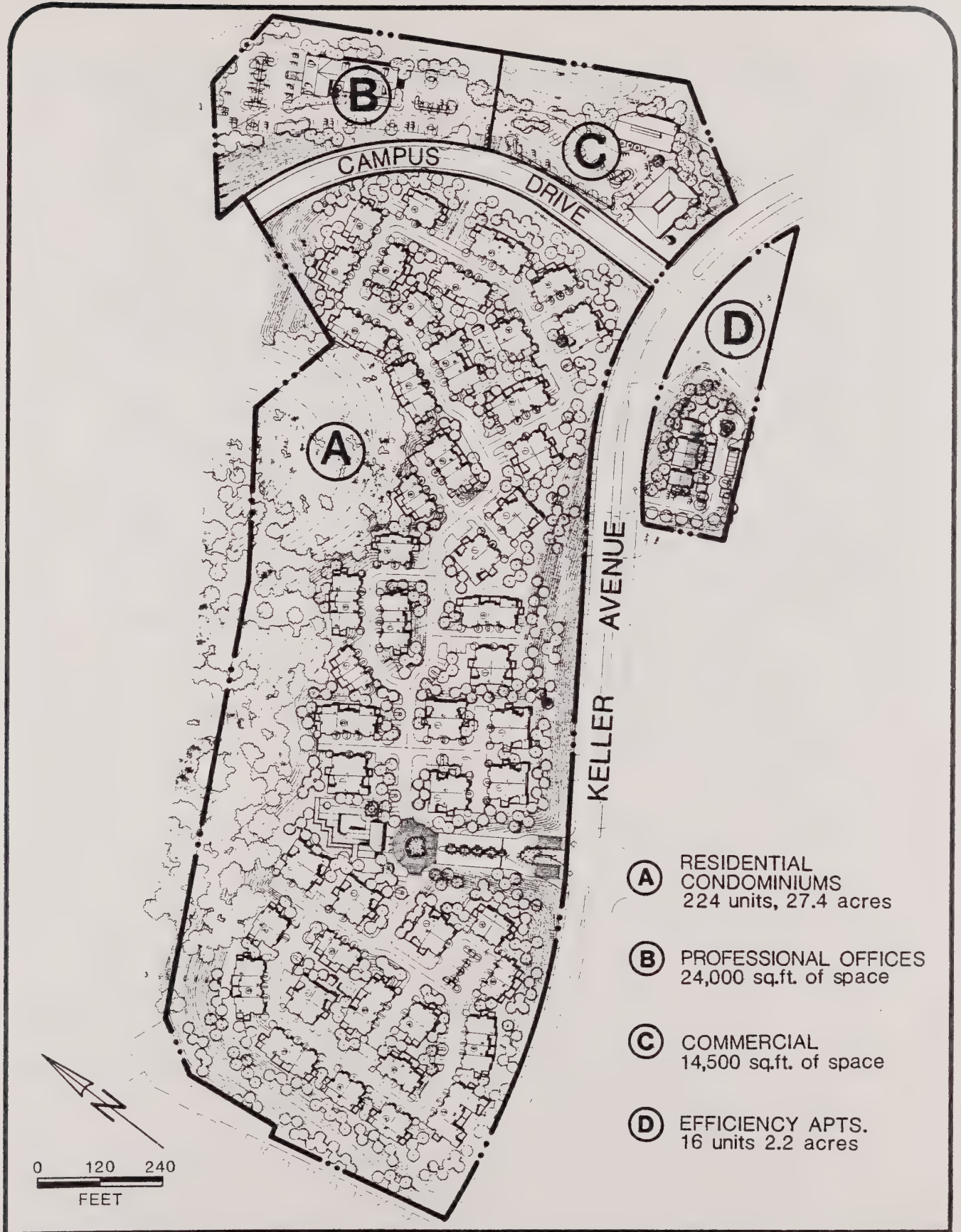
22

23 3.2.0 Project Characteristics

24

25 The proposed site plan for the mixed use project is shown
26 on Figure 2. The predominant land use is attached resi-
27 dential condominiums. Two-hundred-twenty-four (224) units
28 are planned for this 27.4-acre parcel (Parcel A, Fig-
29 ures 2). The one-story and two-story units with parking
30 will be located in clusters of four to five units. Five
31 different floor plans are available ranging in size from
32 900 to 1,500 square feet. Each of the five unit types
33 includes one or two of the 360 covered parking spaces. In
34 addition, there are 193 open parking spaces, making a
35 total of 553 parking spaces. A recreation facility with a
36 swimming pool is located within the condominium area.





1 Efficiency apartments are planned for the 2.2-acre parcel
2 located on the south side of Keller Avenue (Parcel D,
3 Figure 2). These apartments will be two stories high and
4 will have 16 units. Thirty-two (32) parking spaces will
5 be provided, 16 of which will be covered.

6
7 Several commercial uses will be located on the 5-acre
8 parcel that lies to the east of the Campus Drive. A
9 one-story 8,500 square foot mini-market with 34 parking
10 spaces is planned (Parcel C, Figure 2). Six-thousand
11 (6,000) square feet of convenience shops will be located
12 adjacent to the mini-market (Parcel C, Figure 2). Twenty-
13 four (24) parking spaces will be provided for these
14 shops. A two-story professional office building will be
15 located on the north end of this parcel. These offices
16 will have 24,000 square feet and will have 96 parking
17 spaces (Parcel B, Figure 2).

1 4.0 ENVIRONMENTAL ANALYSIS

2

3 4.1.0 Vegetation

4

5 This topic was discussed in the Caballo Hills EIR. Dis-
6 cussion of this topic is found on the following pages of
7 the Caballo Hills EIR.

8

9	Setting	-	Pages 29- 37
10	Impacts	-	Pages 93-100
11	Mitigation	-	Pages 163-165

12

13 4.2.0 Wildlife

14

15 This topic was discussed in the Caballo Hills EIR. Dis-
16 cussion of this topic is found on the following pages of
17 the Caballo Hills EIR.

18

19	Setting	-	Pages 37- 41
20	Impacts	-	Pages 101-102
21	Mitigation	-	Pages 165-166

22

23 4.3.0 Geology, Soils, and Seismic Risk

24

25 This topic was discussed in the Caballo Hills EIR. Dis-
26 cussion of this topic is found on the following pages of
27 the Caballo Hills EIR.

28

29	Setting	-	Pages 41- 47
30	Impacts	-	Pages 102-104
31	Mitigation	-	Pages 166-168

32

33

34

35

1 4.4.0 Climate and Air Quality

2

3 This topic was discussed in the Caballo Hills EIR. Dis-
4 cussion of this topic is found on the following pages of
5 the Caballo Hills EIR.

6

7	Setting	-	Pages 48- 52
8	Impacts	-	Pages 107-116
9	Mitigation	-	No mitigating measures were
10			recommended

11

12 4.5.0 Land Use

13

14 This topic was discussed in the Caballo Hills EIR. Dis-
15 cussion of this topic is found on the following pages of
16 the Caballo Hills EIR.

17

18	Setting	-	Pages 52- 54
19	Impacts	-	No impacts were anticipated
20	Mitigation	-	No mitigating measures were
21			recommended

22

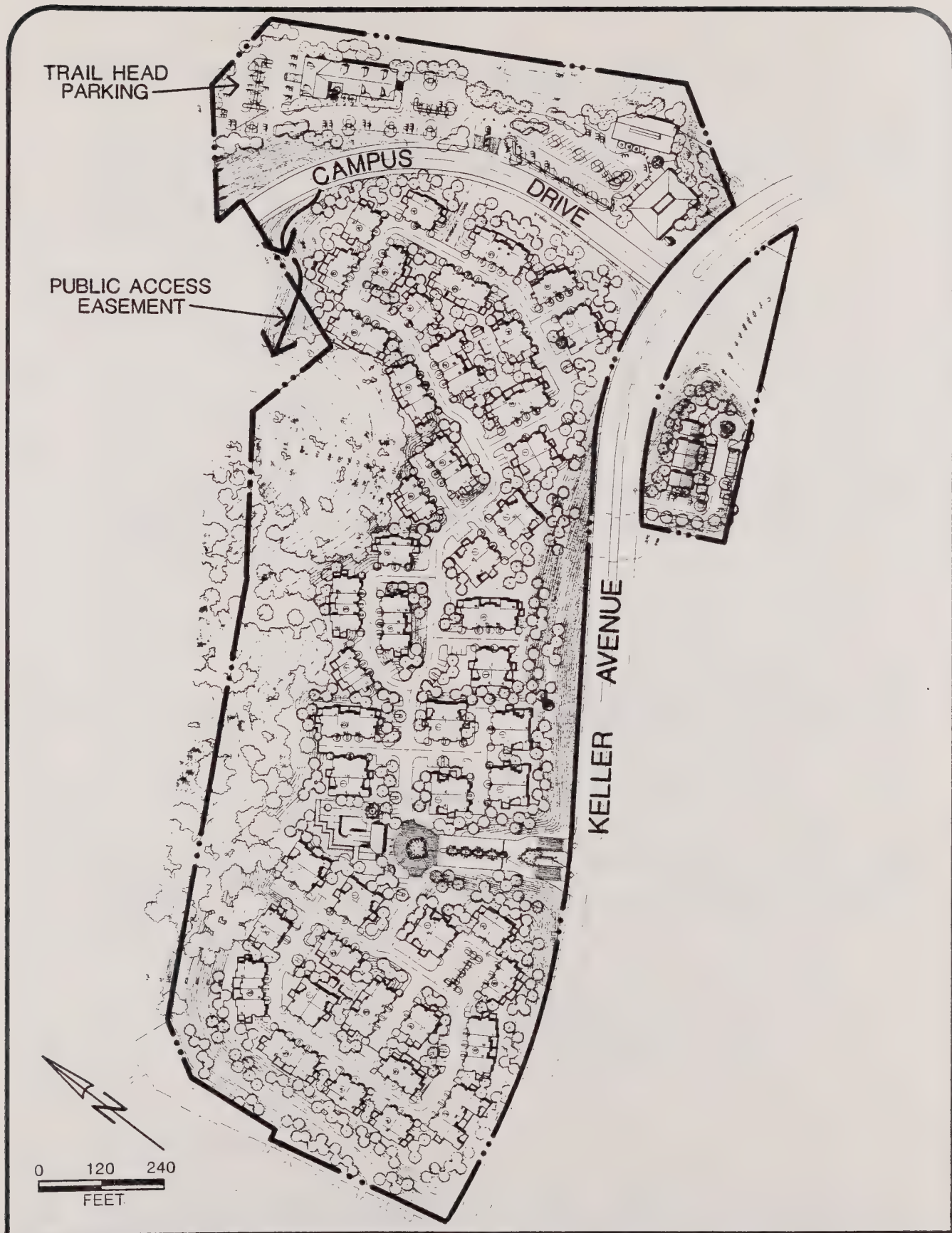
23 Subsequent to the Caballo Hills EIR, and as a part of the
24 Tentative Map 3393, and Tentative Maps 4761 and 5019, over
25 400 acres were dedicated to the East Bay Regional Park
26 District. In these dedications, public access has been
27 established. The proposed project provides public parking
28 in and around the office and commercial areas. Some of
29 this parking may be used by hikers. An access easement is
30 provided across the Keller Avenue site as indicated on the
31 following figure. (Figure 3)

32

33

34

35



1 4.6.0 Public Facilities, Utilities, and Services

2

3 This topic was discussed in the Caballo Hills EIR. Dis-
4 cussion of this topic is found on the following pages of
5 the Caballo Hills EIR.

6

7 Setting - Pages 55- 61

8 Impacts - Pages 116-125

9 Mitigation - Page 170

10

11 4.7.0 Demography

12

13 This topic was discussed in the Caballo Hills EIR. Dis-
14 cussion of this topic is found on the following pages of
15 the Caballo Hills EIR.

16

17 Setting - Pages 67- 75

18 Impacts - Pages 138-141

19 Mitigation - No mitigating measures were
20 recommended

21

22 4.8.0 Historic and Archaeological Resources

23

24 This topic was discussed in the Caballo Hills EIR. Dis-
25 cussion of this topic is found on the following pages of
26 the Caballo Hills EIR.

27

28 Setting - Pages 75- 79

29 Impacts - Page 141

30 Mitigation - Page 171

31

32 4.9.0 Economics

33

34 This topic was discussed on pages 142-159 of the Caballo
35 Hills EIR.

1 4.10.0 Acoustics

2
3 This topic was discussed in the Caballo Hills EIR. Dis-
4 cussion of this topic was found on the following pages of
5 the Cabllo Hills EIR.

6
7 Setting - Pages 64- 67
8 Impacts - Pages 132-138
9 Mitigation - Pages 170-171

10
11 This section has been updated by an analysis prepared by
12 Charles M. Salter, Associates, Inc. and their update is
13 contained in a letter report, dated January 5th and 19th,
14 and is contained in Appendix B of this report.

15
16 4.11.0 Hydrology

17
18 Setting

19
20 Drainage and hydrology for the entire Caballo Hills was
21 covered in the original EIR (Pages 47-48). That EIR
22 included an area defined as "Special Use," which is now
23 the Keller Avenue property. The precise land use of that
24 area, which included the land now zoned as C-20 Shopping
25 Center Commercial, was unknown. Since the acceptance of
26 the EIR and subsequent approval of the Caballo Hills
27 Tentative Map, the actual alignment of Campus Drive near
28 Keller Avenue, has been revised. A revised Tentative Map,
29 Tract 5019, has been approved and created for Parcels A,
30 B, C, and D which comprise the Keller Avenue PUD.

31
32 Impacts

33
34 The drainage impacts connected with Ridgemont Project were
35 described on pages 105-106 of the Caballo Hills EIR. The
36 revised alignment of Campus Drive has been approved, and

1 the corresponding Grading and Improvement Plans have been
2 approved and bonded. These Improvement Plans included
3 provisions for the existing Rifle Range branch of Arroyo
4 Viejo Creek to be culverted beneath the fill and includes
5 run-off factors which reflect the proposed PUD. The
6 attached Drainage Map reflects the proposed drainage
7 plan. Two-hundred-twenty-four (224) units are proposed
8 for Parcel A which comprises the majority of the filled
9 area (Figures 2). This area has been included in the
10 drainage calculation using a run-off coefficient of 0.65.
11 Although the actual layout will differ from the schematic
12 shown in the previous EIR, the discharge into the main
13 pipe has not changed significantly. Parcels B and C (see
14 Figure 2) were included within large drainage areas
15 "AE 109B" and "B 111B" on the engineer's Drainage Map.
16 The 0.9 run-off coefficient of the highly impervious sur-
17 faces surrounding the proposed commercial/office area was
18 prorated with a 0.4 coefficient for the grassed and shrub-
19 bed hillside above.

20
21 Parcel D (see Figure 2) is the only portion of the project
22 which is on the south side of Keller Avenue. The parcel
23 which includes over 2 acres of land is mostly steep and
24 not much of the area is suitable for development. The
25 proposed efficiency apartments will cover less than one-
26 fifth of the parcel and should not significantly increase
27 the downstream flows.

28
29 Although the existing character of the creek will be
30 altered significantly due to the approved grading plan,
31 the proposed Keller Avenue PUD does little to change the
32 anticipated runoff used in the approved drainage
33 improvements.

1 The filled land, although somewhat more impervious than
2 the existing condition, is reasonably flat. As such,
3 retention time and the resulting time of concentration
4 would be increased, thereby offsetting the increased
5 runoff anticipated. The pipe under Keller Avenue was
6 designed in conjunction with Keller Avenue and anticipated
7 development of the Mountain Village project at a much
8 higher density (2,200 dwelling units) than the final
9 approved plan (450-500 dwelling units).

10
11 By filling the creek and creating an effective "dam"
12 across the Rifle Range branch of Arroyo Viejo Creek, a
13 permanent scouring prevention basin will be constructed
14 allowing the large scour-contributing sand and gravel to
15 settle out of the creek discharge prior to entering the
16 66-inch main conduit. This should help to significantly
17 reduce the present maintenance problem downstream of this
18 project where the pipe has been literally sandblasted
19 away. In addition, the "dam" will effectively allow a
20 large volume of water to be retained and released steadily
21 over a long period of time in the event of a flood pro-
22 ducing runoff.

23
24 Anticipating the extremely remote possibility of a combin-
25 ation of plugged and excessive runoff (enough to over-top
26 the fill), an emergency "spillway" is proposed to flow
27 through the parking areas of the office area across the
28 low point of Campus Drive and into a grassed swale along
29 the rear of the residential units on Parcel A (see Fig-
30 ure 2). This path is designed for flows of a 100-year
31 storm. These flows then cross the low point of Keller
32 Avenue near the outlet of the 66-inch pipe under Keller
33 Avenue and follow the historic routes to the Bay.



NOTE: PIPE SIZES ARE IDENTIFIED ALONG THE PIPE RUNS

1 Mitigation

2

3 The scouring prevention basin should be periodically main-
4 tained. Other mitigating measures were noted on page 168
5 through 170 of the previous EIR.

6

7 4.12.0 Visual

8

9 Setting

10

11 The existing visual conditions for the entire Ridgemont
12 project, including the Keller Avenue site, was covered in
13 the Caballo Hills EIR (pages 24-29).

14

15 Impacts

16

17 The proposed project is composed of 224 attached residen-
18 tial dwelling units. The units are comprised of five
19 types of dwelling units which are combined in five differ-
20 ent building types, one 16-unit apartment complex and a
21 professional office facility, convenience shops, and a
22 mini-market.

23

24 The individual dwelling units vary in size from 900 square
25 feet to 1,510 square feet. They are constructed in two-
26 to three-story structures and have between two and three
27 bedrooms. The three-story units have a garage on the
28 lower level and front door access from the second level.
29 The exterior of the residential units will be constructed
30 of horizontal hardboard siding with a stained wood finish
31 appearance and natural earth tone colors tending towards
32 the light grays, light browns, and charcoal. All of the
33 edging, such as the corners of the buildings and roof
34 fascia lines, are proposed to be painted white trim. Roof
35 materials will be composition shingle in brown and char-
36 coal tones.

1 The efficiency apartments will be two-story structures
2 totaling 16 units. There will be 32 parking stalls pro-
3 vided, including 16 covered parking spaces. These build-
4 ings will be constructed with finish materials similar to
5 those of the residential units. The professional offices
6 will be three-story structures including 24,000 square
7 feet of gross building area. There are 86 parking stalls
8 proposed. The buildings' finish will be similar to those
9 of the residential units. The convenience shops are
10 one-story units to provide for uses such as barber shops,
11 beauty shops, cleaners, etc. The area for these units
12 totals 6,000 square feet and have 24 parking stalls. The
13 building finish of these units will be similar to the
14 residential units.

15
16 The mini-market will be a one-story structure with 8,500
17 square feet. There will be 54 parking stalls provided for
18 this market. There is no separate access available for
19 truck loading. It appears that loading will have to occur
20 parallel to the curb between the mini-market and the park-
21 ing spaces. Because of the mini-market operating charac-
22 teristics, the number of trucks anticipated do not appear
23 to be substantial and the lack of separate loading space
24 is not anticipated to be a significant problem. The
25 appearance of the building materials of the mini market
26 are expected to be similar to those of the other units of
27 the project.

28 29 Building Types

30
31 The residential units described above are combined in
32 various combinations to form five different building
33 types. These building types are combined as follows:
34
35

	<u>Type</u>	<u>Comprised of Two Units Each of:</u>
1		
2		
3		
4	1	C and A
5	2	A, C, and E
6	3	B, C, and E
7	4	C and B
8	5	D and E
9		

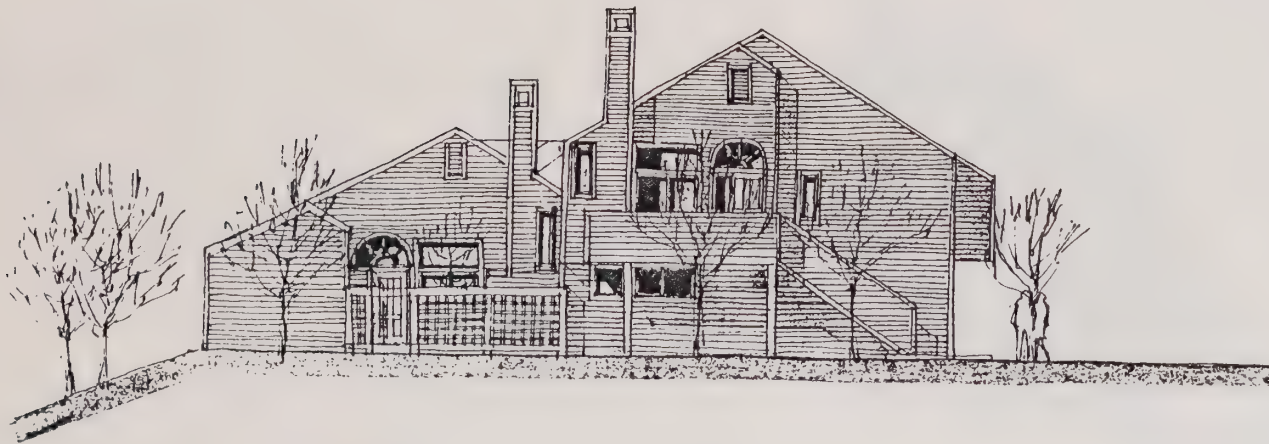
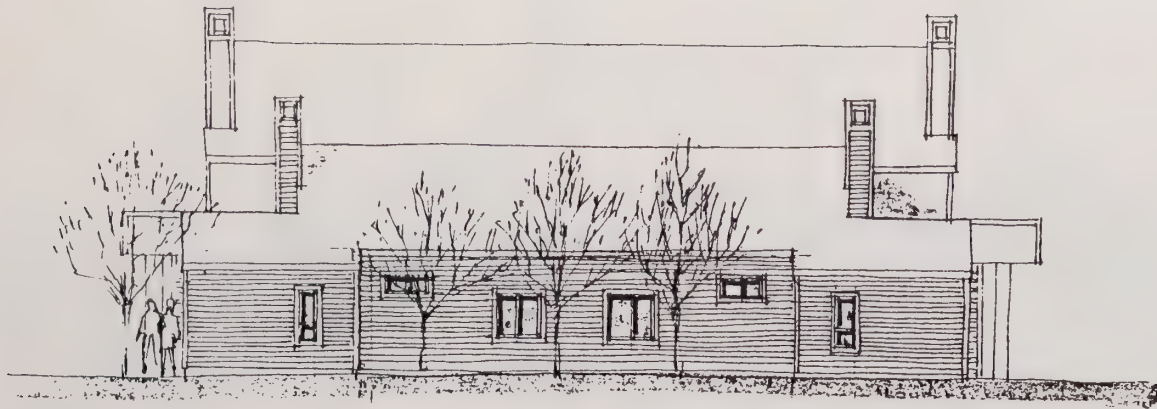
Represented in the proposed site plan are thirteen Type 1's, three Type 2's, fifteen Type 3's, nine Type 4's, and six Type 5's for a total of forty-eight buildings on the site. The residential units are combined to provide a garage at the lowest level of each of the building Types. Access to all buildings is provided from the sides. Types 2, 3, and 5 also provide for access to the building site opposite the garages as well.

Elevations of the various residential building styles are shown on Figures 5 through 9. Elevations of the proposed club house in the residential area, the efficiency apartments, the offices, convenience shops, or mini-markets are not available for review at this time.

The building elevations provided by Sandy and Babcock indicate the buildings have the richest architectural treatment on the sides. Half-round windows, doorways, stairs, and lattice screening for patio privacy have their major emphasis in these areas.

Site Planning

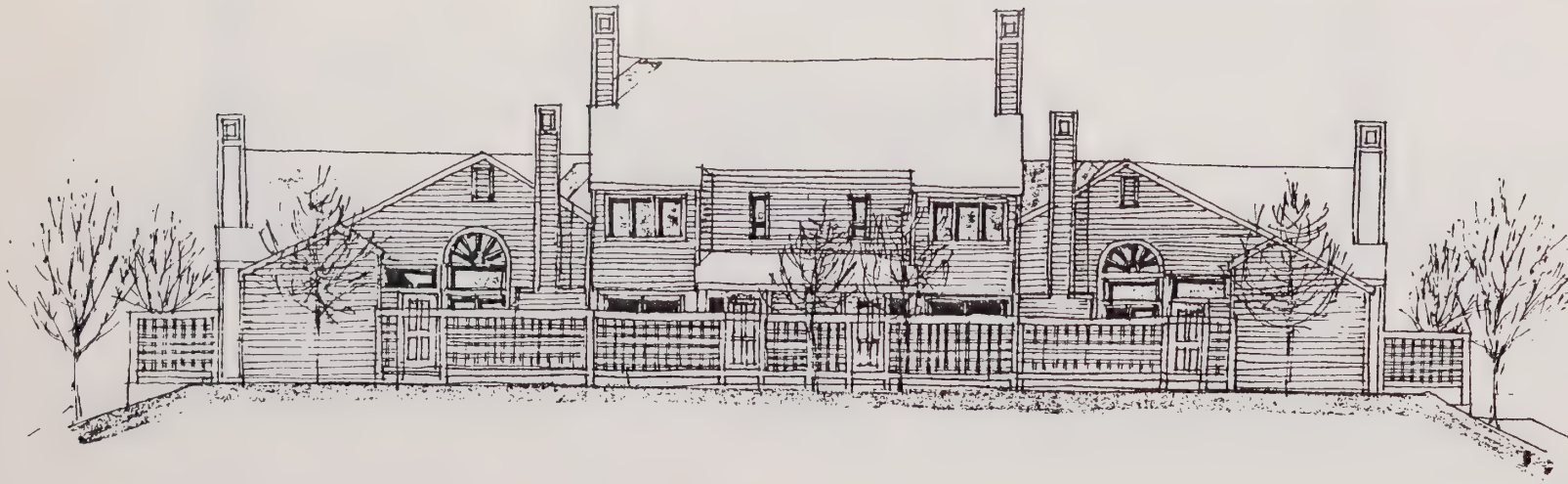
The site plan clusters these units on a series of private streets with one access point off of Keller Avenue. The Keller Avenue access indicates a decorative driveway and entrance treatment. Each of the units are oriented off of a private drive with supplemental guest parking scattered throughout the site plan. The owners access the garages



SANDY & BABCOCK
 1349 LARWIN STREET
 SAN FRANCISCO, CA 94109
 ARCHITECTS PLANNERS TELEPHONE (415) 673-8990

BLDG. TYPE 1

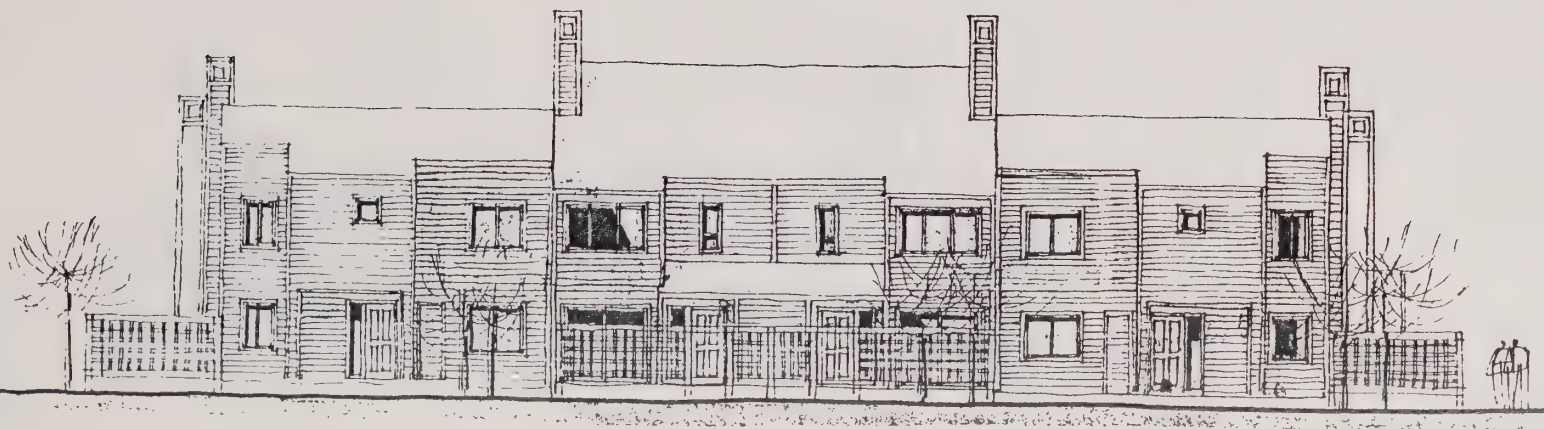
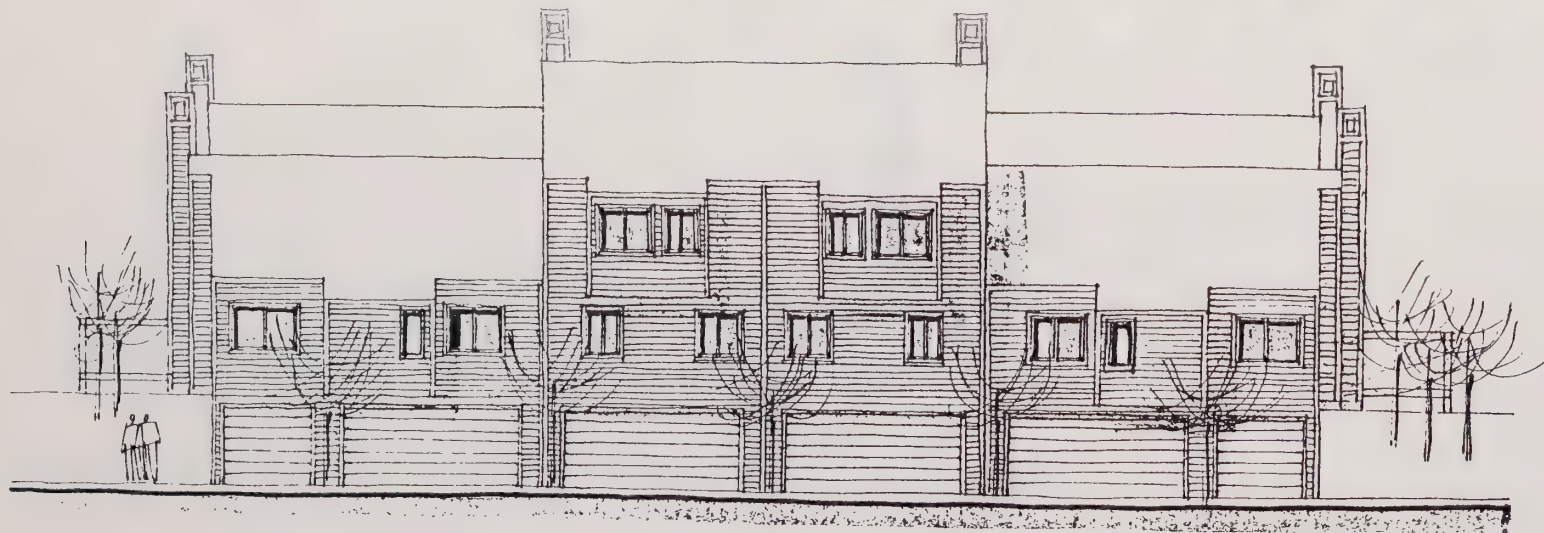
FIGURE 5



SANDY & BABCOCK
 1349 LARKIN STREET
 SAN FRANCISCO, CA 94109
 ARCHITECTS PLANNERS TELEPHONE (415) 673-8930

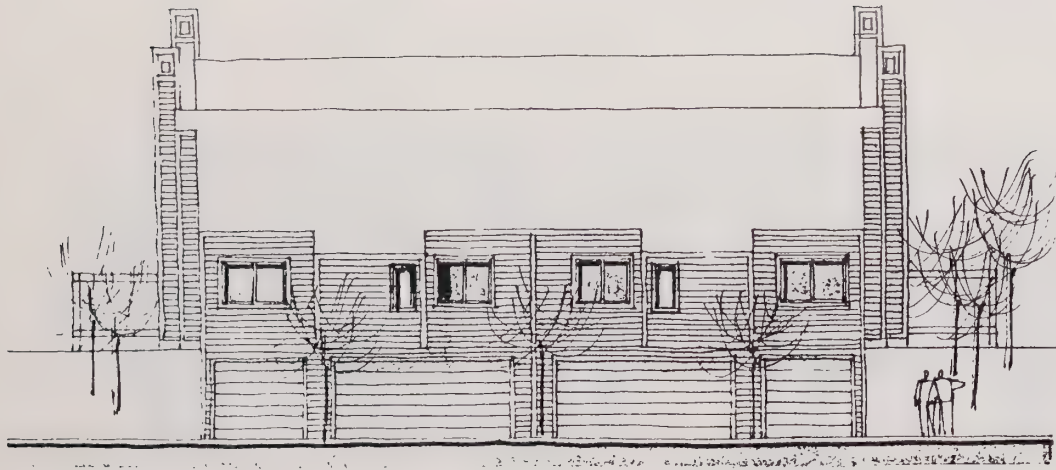
BLDG. TYPE 2

FIGURE 6



SANDY & BARCOCK
 1349 LARKIN STREET
 SAN FRANCISCO, CA 94109
 ARCHITECTS PLANNERS TELEPHONE (415) 673-8990

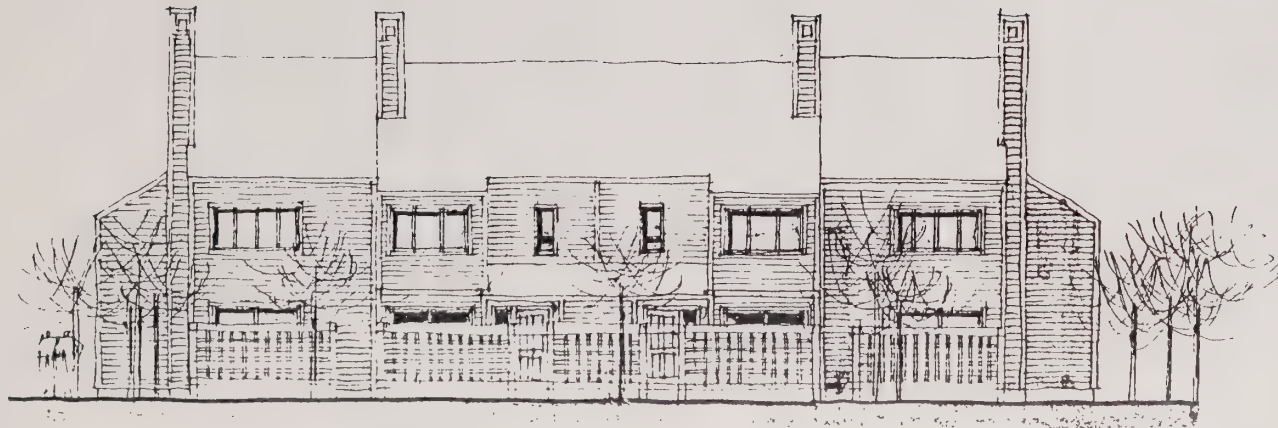
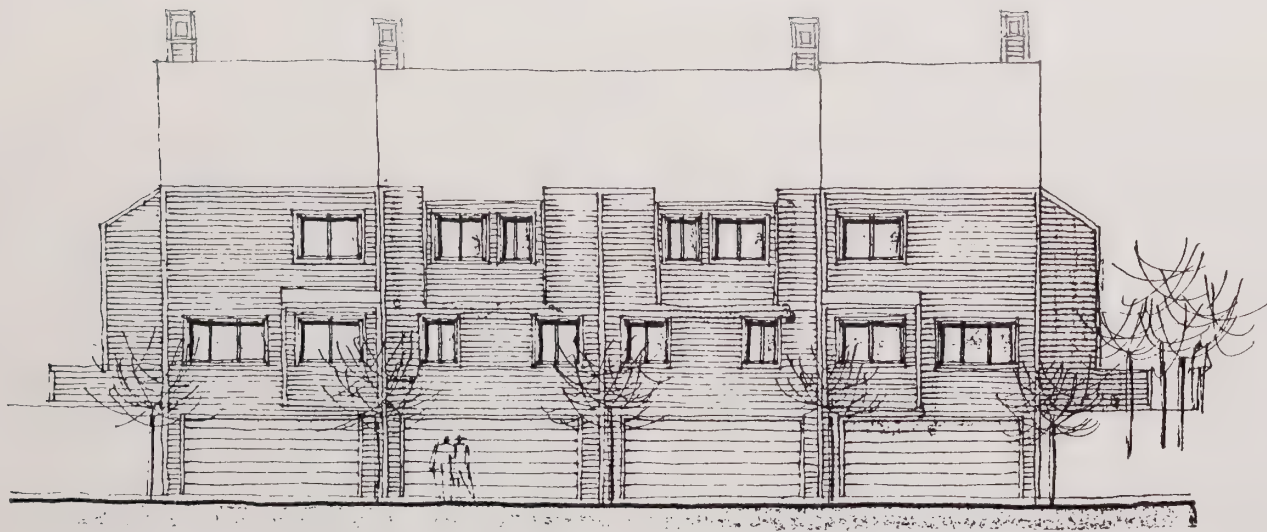
B'LDG. TYPE 3



SANDY & BABCOCK
 1349 LARKIN STREET
 SAN FRANCISCO, CA 94109
 ARCHITECTS PLANNERS TELEPHONE (415) 673-8990

BLDG. TYPE 4

FIGURE 8



SANDY & BABCOCK
 1349 LARKIN STREET
 SAN FRANCISCO, CA 94109
 ARCHITECTS PLANNERS TELEPHONE (415) 673-8990

BLDG. TYPE 5

1 off the private street. The garage entrances are oriented
2 away from the more highly used interior streets as much as
3 possible.

4
5 There are 553 parking spaces in the residential area.
6 This represents approximately 2.5 parking spaces per
7 dwelling unit. There are 360 covered parking spaces. A
8 and B Type units have one covered space. Seventy-four
9 (74) uncovered spaces are dedicated to A and B units, 119
10 are guest stalls.

11
12 Entrances to the individual units either occurs directly
13 through a stairway to the unit from the garage or by walk-
14 ing around from the garages or guest parking to the front
15 door of the individual units. Individual dwelling units,
16 Types A and B, are the only units which do not have access
17 available directly to the garage.

18
19 The use of the garage under the units enables the units to
20 climb approximately 8 feet of topography, which is impor-
21 tant in respect to the site's varying topography. Access
22 ways around the units must be provided for units 2, 3, and
23 4 necessitating corresponding architectural and landscape
24 treatment. In units 1 and 4, access is limited to the
25 opposite ends. In these cases, the remaining elevation is
26 treated in a simple manner. Access along both sides must
27 be provided to units 1 and 4. In addition to residential
28 building types, there is a swimming pool and recreation
29 complex proposed with direct access from the main
30 entrance. The other recreation area is located near the
31 intersection of Campus Drive and Keller Avenue clustered
32 between the dwelling units. Elevations of these buildings
33 are not yet available.

1 Views of the Project Near the Site

2
3 In order to evaluate the appearance of the proposed Keller
4 Avenue Project near the site, four viewing locations were
5 selected. Each of those viewing areas has been supple-
6 mented by a photograph with an artist's interpretation of
7 the project's appearance from that location superimposed
8 on the photograph. The locations are as follows:

9
10 Viewing Location 1 - At the end of Pinecrest off Hansom,
11 View 1 is representing the westward view from the ridge
12 above the property. The project represents an infilling
13 of the urbanization which can be seen beyond Keller
14 Avenue. This will be low on the horizon and should not
15 disturb more predominant views of the rest of Oakland, the
16 Bay, and San Francisco (see Figure 10).

17
18 Viewing Location 2 - This location is taken from south-
19 east, from Rilea Way, and from the back of the existing
20 apartment buildings. The project represents the develop-
21 ment of a neighboring subdivision on the adjoining pro-
22 perty which had previously been undeveloped. The project
23 proposes to develop an area almost identical in scope to
24 that covered in the previous EIR, it is only the unit
25 types which are different (see Figure 11).

26
27 The project is proposed to be built on substantial fill.
28 The visual impact of this fill will elevate the building
29 pads higher than the existing grade. The distance between
30 the proposed project and the existing apartment is rela-
31 tively the same as described in the previous EIR. The
32 residential area is the closest and the other uses are not
33 viewable from this location. No garages or outside park-
34 ing can be seen from this location. The site plan pro-
35 vides various building types at various angles. Viewers



View From the Ridge
Off Pinecrest



View From the End
of Rilea Way

1 will generally perceive a variety of geometric shapes and
2 forms highlighted with shade and shadows or penetrated by
3 fenestration. Privacy fencing constructed of wooden
4 lattice will create patterns. Landscaping will soften the
5 visual impact and aid in making the transition from the
6 new construction to the existing topography and vegetation.

7
8 Viewing Location 3 - This location is from the Oak Knoll
9 Hospital looking into the entry of the proposed project.
10 In this case, the meadow will be raised by the fill
11 material graded from the sides. The appearance from this
12 location will be varied due to the different building
13 elevations and orientations on the site (see Figure 12).

14
15 Viewing Location 4 - This location is a panoramic view
16 from the upper portion of Keller Avenue, including the
17 residential area and apartment area. Because the apart-
18 ment building is below the road, it will not be visible
19 from this location. Motorists on this route will have a
20 sweeping view of the other buildings in the project for
21 the one or two minutes or so that it will take to pass the
22 site (see Figure 13).

23 24 Landscape Concept

25
26 The landscape program for this site is intended to create
27 an environment that visually integrates the proposed hous-
28 ing development into the existing community to aid in
29 reestablishing the vegetation on those slopes graded to
30 permit this development; and, above all, give the develop-
31 ment itself a sense of continuity and community.

32
33 To best accomplish these aims, the site has been divided
34 into three zones of development. These zones are:



View of Project Entry
From Oak Knoll



View from Keller
and Campus Drive

- 1 Zone 1 - Non-graded site areas.
2 Zone 2 - Graded areas in excess of 3:1 slope.
3 Zone 3 - Remaining site which includes roads,
4 sidewalks, and steps, recreation facilities,
5 housing units, and the commercial area.

6
7 These areas are not mutually exclusive. The edges between
8 these zones allow for a transition from one type of land-
9 scape to the next. Many trees and shrubs will be common
10 to the overall site development.

11
12 Zone 1 - Non-Graded Site Areas - This zone includes those
13 areas left un-graded above the proposed development.
14 Every attempt will be made to preserve and protect exist-
15 ing trees and shrubbery left within this zone after grad-
16 ing is finished, where necessary replanting will occur
17 that compliments the existing vegetation.

18
19 Zone 2 - Graded Areas in Excess of 3:1 - Throughout the
20 site, many areas will be graded that are at 3:1 and
21 steeper. Within these areas planting will help to prevent
22 erosion and provide ground coverage. Grass mixtures will
23 be used that start and cover quickly. Shrub and tree mix-
24 tures will be selected which compliment the overall site
25 development and be maintained by a conventional irrigation
26 system.

27
28 Zone 3 - Remaining Site which includes Road, Sidewalks,
29 and Steps, Recreation Facilities, Housing Units, and the
30 Commercial Area - Within this zone the pedestrian scale is
31 important. Shrub and tree locations will be placed
32 according to commercial, housing plans, and circulation
33 systems. Screening will be provided where necessary.
34 Erosion control measures will be used were needed. Plant
35 materials will be selected for their seasonal effects,
36 beauty, and low maintenance.

1 The recreational facilities will consist of a small swim-
2 ming pool and ancilliary 'dip' pools, sunning decks and a
3 spa area. These will all be landscaped in a manner that
4 buffers and screens residents adjacent to these facilities.

5
6 Regional View Shed

7
8 The face of the Ridgemont project, in particular the
9 Gallegher and Burk Quarry, is a regional landmark which
10 can be seen from many points in the Bay area. The Keller
11 Avenue Project site is not visible to the broader view
12 shed.

13
14 Single family detached dwelling units would have indivi-
15 dual building pads with side yards separating them from
16 adjoining structures. These units would be smaller in
17 individual building mass and the approved tentative map
18 would provide 56 units and a 5.4-acre commercial area.
19 This approach would also have fencing on the lot lines
20 between each unit.

21
22 In comparison, the proposed project would have fewer
23 buildings than the comparable single family project. The
24 proposed condominium project provides for the grouping of
25 units (from 4-6) in one building with small private patios
26 and privacy screening. The 224 dwelling units are in 46
27 buildings. These individual buildings would be larger
28 than the single family buildings, require less fencing,
29 but housing more people.

30
31 In summary, the dwelling units are different and will have
32 less visual impact than those described in the previous
33 EIR. More detailed architectural renderings are provided
34 for the reviewer. In this case, size of buildings are
35 limited to six units, and in many cases four. There are

1 substantial breaks between units which provide light, air,
2 landscaping, and variety to soften the users environment.
3 Because the building types used are individual dwelling
4 units, the units constructed in a variety of building
5 types and carefully scattered on the site offer a variety
6 of appearance and physical form, which are important. The
7 changing topography and the manner in which these build-
8 ings adjust to topography are important constraints to the
9 site, which add to the project's variety and interest.

10 11 Mitigation

12
13 Garages have been located to minimize visual impacts from
14 the road. A variety of dwelling units have been attached
15 to create five different building types. The number of
16 units in a building has been limited to a maximum of six.
17 Landscape treatment should be used to enhance site areas,
18 access the individual units, circulation, and views
19 between buildings and to soften the project's off-site
20 appearance.

21
22 Landscape buffers should be considered to protect apart-
23 ments on Rilea Way. Where roof equipment in the commer-
24 cial area might be visable from existing neighborhoods,
25 the equipment should be painted to match the roof or
26 screened from view.

27 28 4.13.0 Transportation

29 30 Setting

31 32 Project Description

33
34 The Keller Avenue Project is a mixed land use development
35 of 224 condominium dwelling units, 16 efficiency apart-
36 ments, 24,000 square feet of professional offices, and a

1 14,500 square foot retail shopping area which will contain
2 an 8,500 square foot mini-market and 6,000 square feet of
3 other convenience shops. The project site of 34.6 acres
4 is shown on Figure 2. The condominiums will be on the
5 north side of Keller Avenue and west of Campus Drive. The
6 apartments will be on the south side of Keller Avenue.
7 The commercial area and offices will be located along the
8 east side of Campus Drive.

9
10 There will be no interior street connections between the
11 residential and retail areas. The main entrance to the
12 condominiums will be opposite the location of an access
13 road to the Oak Knoll Naval Hospital. The apartments will
14 have a right turns only entrance-exit about 400 feet west-
15 erly from the Keller Avenue-Campus Drive intersection.
16 The retail shops and offices will have one access driveway
17 to Campus Drive about 400 feet northerly from the Campus
18 Drive-Keller Avenue intersection.

19
20 The proposed interior street circulation system for the
21 condominium portion of the Keller Avenue Project has a
22 divided roadway entrance connecting to 30-foot wide
23 streets. The 30-foot width serves the major traffic flow
24 while 25-foot wide streets are designed for residential
25 loop roads at both the east and west end of the site.
26 Off-street parking for residents and guest are provided at
27 a ratio of approximately 2.5 spaces per dwelling unit.
28 The street throughout the Keller Avenue Project, both the
29 residential and commercial portions, has been designed to
30 accommodate movement of delivery and service trucks and
31 emergency vehicles.

32
33 Sidewalks and pathways have been located to facilitate
34 pedestrian movements within the development, as well as
35 access to Keller Avenue. The internal street system is
36 shown in Figure 2.

1 Existing Street System

2

3 Keller Avenue is a four-lane divided major city street
4 that runs between Mountain Boulevard and Skyline Boule-
5 vard. Keller Avenue has been designed with left turn
6 storage lanes at all intersecting streets.

7

8 Keller Avenue crosses Highway I-580 on a three-lane over-
9 crossing and continues as a two-lane minor street for
10 three blocks to Greenly Drive. There is a modified dia-
11 mond interchange at Keller Avenue and Highway I-580 that
12 provides access to the freeway for all movements.

13

14 Campus Drive is planned as a two-lane city street that
15 will extend through the Ridgemont project site from Keller
16 Avenue to Redwood Road. It has been constructed from
17 Redwood Road to Merritt Junior College as a four-lane
18 divided street and is being extended southerly as a two-
19 lane street as part of a new subdivision now under con-
20 struction. Campus Drive may be completed by 1983 or 1984
21 if development of the Ridgemont subdivision continues at
22 its present pace.^{1/}

23

24 Skyline Boulevard is a two-lane city street that runs from
25 Grass Valley Drive to Redwood Road where it connects to
26 Joaquin Miller Road; it is lightly traveled.

27

28 Oak Knoll Hospital Road at Keller Avenue has two lanes in
29 and two lanes out. For exiting traffic, the left lane is
30 for left turns only while the right lane serves left turns
31 as well as right turns. There is a gate which is closed
32 during designated times of the day.

33

34 ^{1/} Telephone conversation with Jim Coolidge, City of
35 Oakland Public Works Department.

1 Mountain Boulevard is a two-lane street that operates as a
2 frontage road along the east side of Highway I-580 from
3 Golf Links Road past Keller Avenue to Edward Avenue where
4 there is a half-diamond interchange with Highway I-580.
5 The northbound approach to Keller Avenue has two lanes.
6 The northbound off-ramp serving Keller Avenue from Highway
7 I-580 connects to Mountain Boulevard south of Keller
8 Avenue.

10 Fontaine Street is a minor residential street that runs
11 from Keller Avenue southerly to Golf Links Road. The
12 southbound on-ramp from Keller Avenue to I-580 connects to
13 Fontaine Street, which is one-way southbound where it
14 shares the roadway with the southbound I-580 on-ramp.

16 Existing traffic on Keller Avenue was counted on Janu-
17 ary 6, 1983, and found to be 4,873 vehicles per day just
18 east of Rilea Way.

20 A 24-hour volume count was taken on June 10, 1982, along
21 Keller Avenue east of the Oak Knoll gate and showed the
22 daily volume there to be some 3,707 vehicles. Manual
23 turning movement counts were taken in January 1983 at
24 Keller Avenue intersections with Fontaine Street, Mountain
25 Boulevard, and Oak Knoll Hospital. Traffic at the Moun-
26 tain Boulevard Gate to Oak Knoll Hospital was also counted
27 (see Appendix C).

29 The two-way volume along Keller Avenue, east of Mountain
30 Boulevard during the a.m. and p.m. peak hours was recorded
31 as 382 and 548, respectively. Assuming that the p.m. peak
32 hour is nine percent (9%) of the total daily traffic, the
33 two-way 24-hour volume count of Keller Avenue immediately
34 east of Mountain Boulevard is some 6,100 vehicles.

Recent turning movement counts taken during the p.m. peak hour at both the Mountain Boulevard and the Keller Avenue gates to Oak Knoll Naval Hospital recorded some 951 total vehicles. These counts are summarized in Table 1:

Table 1

OAK KNOLL NAVAL HOSPITAL
P.M. Peak Hour Traffic
(4:00 p.m. - 5:00 p.m.)

Gate	Total Traffic					
	In	Percent	Out	Percent	Total	Percent
Mountain Boulevard	197	25%	587	75%	784	82%
Keller Avenue	9	5%	158	95%	167	18%
TOTAL	206	22%	745	78%	951	100%

Public Transportation

AC Transit services the Oak Knoll Naval Hospital by Route 56 which runs between the hospital and the Coliseum Bart Station. This line stops at the intersection of Keller Avenue and Mountain Boulevard and runs along Mountain Boulevard and into the existing hospital main gate.

Impacts

The trip generation rates that have been used for assessing project traffic impacts from the Keller Avenue project are as follows:

For the condominium dwelling units and for the apartments, an average weekday rate of nine trips per dwelling unit was used. This rate is based on information given in CalTrans District 4 13th Progress Report on Trip Ends Generation Research Counts, using average values from studies 297, 298, 299, 300, 301, 303, 306, and 307. These are

studies of existing condominium and townhouse developments in Alameda County. P.M. peak-hour traffic is ten percent (10%) of daily traffic with an average sixty-five percent/thirty-five percent (65%/35%) inbound/outbound split.

For the retail shops, an average weekday trip generation rate of 85.8 trips per 1,000 square feet of floor area was used. This is an average rate for neighborhood shopping centers as given in CalTrans 10th Progress Report on Trip Ends Generation Research Counts. P.M. peak-hour traffic is twelve percent (12%) of daily traffic with an average fifty percent/fifty percent (50%/50%) inbound/outbound split.

For professional offices an average weekday trip generation rate of 14.9 trips per 1,000 square feet of floor area was used, as given in CalTrans 10th Progress Report on Trip Ends Generation Research Counts. P.M. peak-hour traffic is fifteen percent (15%) of daily traffic with an average twenty-five percent/seventy-five percent (25%/75%) inbound/outbound directional split.

Trip generation for the Keller Avenue project is summarized in Table 2:

Table 2
Trip Generation

Land Use	Size or Number Units	Trip Rate	Daily Trips	P.M. Peak- Hour Trips		In/Out Direc- tional Split	
				No.	%	No.	%
Condominiums	224	9/d.u.	2016	202	10%	131/71	65/35
Apartments	16	9/d.u.	144	14	10%	9/5	65/35
Retail	14500	85.8/ 1000 sq.ft.	1244	149	12%	75/74	50/50
Office	24000	14.9/ 1000 sq.ft.	358	41	15%	10/31	25/75
TOTAL			3762	406		225/181	

1 Sources of other traffic which will use Keller Avenue
2 include a portion of trips generated by the Ridgemont
3 development and Merritt Junior College. This traffic
4 accesses Campus Drive directly before going either north-
5 ward to Redwood Road or southward to Keller Avenue (see
6 Tables 3 and 4).

7
8 Ridgemont is a development of some 310 single family homes
9 now under construction. A trip generation factor of 12
10 trips/day/single family home was assumed resulting in some
11 3,720 total trips being generated. A.M. peak-hour traffic
12 is assumed to be ten percent (10%) of the daily traffic.
13 The a.m. peak-hour split is eighty percent (80%) out/
14 twenty percent in and the p.m. peak-hour split is sixty-
15 seven percent (67%) in/thirty-three percent (33%) out.^{1/}

16
17 Trip Distribution

18
19 Traffic generated from the Keller Avenue Project was
20 distributed to the road system with the following
21 assumptions:

- 22
- 23 o Eighty percent (80%) of the residential trips will
 - 24 have origins and destinations beyond the nearby areas
 - 25 and will use Keller Avenue and the I-580 freeway.
 - 26
 - 27 o Seventy-five percent (75%) of the office traffic will
 - 28 have origins and destinations beyond the nearby areas
 - 29 and will use Keller Avenue and I-580 freeway also.
 - 30

31

^{1/} Caballo Hills EIR.

- 1 o Most of the retail stores traffic will be from neigh-
- 2 borhoods within 1 mile of the site, including some of
- 3 the existing residential areas west of the freeway.
- 4
- 5 o There will be some traffic between the retail stores
- 6 and the professional offices which will reduce the
- 7 traffic assigned to the exterior street system from
- 8 these generators by about five percent (5%).
- 9
- 10 o Campus Drive will have been completed between Keller
- 11 Avenue and Redwood Road by the time the Keller Avenue
- 12 Project is completed.
- 13

14 Trip Distribution for the Ridgmont development as docu-
 15 mented in the Caballo Hills EIR (page 126-132) is as
 16 follows:

17
 18 Table 3

19
 20 CABALLO HILLS TRIP DISTRIBUTION

<u>To and From</u>	<u>Percent</u>
Northeast on Redwood Road	5%
Southwest on Redwood Road	40%
East on Keller Avenue	5%
West on Keller Avenue	50%
	<u>100%</u>

21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31 Trip distribution for the year 1990 for Merritt Junior
 32 College as estimated by the City of Oakland is as follows:

33
 34 Table 4

35
 36 MERRITT JUNIOR COLLEGE 1990 TRIP DISTRIBUTION

<u>To and From</u>	<u>Percent</u>
Northeast on Redwood Road	12%
Southwest on Redwood Road	68%
East on Keller Avenue	2%
West on Keller Avenue	18%
	<u>100%</u>

1 Merritt Junior College traffic was estimated by the City
2 of Oakland to amount to some 11,700 trips per day in 1990
3 with twenty percent (20%) of these trips oriented south-
4 ward along Campus Drive and connecting to Keller
5 Avenue.^{1/}

6
7 Oak Knoll Naval Hospital traffic was assumed to remain
8 stable and continue to produce about 8,000 trips per day
9 in 1990. With the Keller Avenue gate only open during
10 a.m./p.m. peak hours about ninety-four percent (94%) of
11 the total hospital traffic uses the Mountain Avenue gate.
12 Should more emphasis be placed on use of the Keller Avenue
13 gate throughout the day there will be a change in this
14 percent of usage. Based upon an analysis of existing peak
15 period turning movement at both gates, it appears that no
16 more than fifty percent (50%) of the daily hospital trips
17 would be oriented toward the Keller Avenue gate if a
18 natural route selection process is allowed. We understand
19 that if emphasis were to be placed on the Keller Avenue
20 gate that it would take the form of signing and publicity
21 rather than decreasing the service now available at the
22 Mountain Avenue gate. This seems to be reasonable since
23 majority of the peak hospital traffic is oriented south-
24 ward and now uses Mountain Boulevard between the main gate
25 and the Golf Link Road interchange with Highway I-580.

26
27 Status of the Oak Knoll Road connecting to Keller Avenue
28 is as follows:

- 29
30 o It is currently open from about 6:30 a.m. to 6:00
31 p.m. This change was instituted recently because
32 there is construction occurring along the Blackwood
33 Street which serves the Mountain Avenue gate.

34
35 ^{1/} May 1, 1972, letter from Oakland City Traffic Engineer
36 to the Director of Public Works.

1 o It appears that the largest use of the Keller Avenue
2 gate at this time is still by hospital staff.

3

4 o Before construction along Blackwood Street the Keller
5 Avenue entrance was only open during peak hours of
6 7:00-9:00 a.m. and 4:00-6:00 p.m.

7

8 o There have been discussions for some time by the naval
9 adminsitration about how to more fully utilize the
10 Keller Avenue entrance. The major advantages would be
11 that approaching drivers can see the hospital as they
12 enter the Keller Avenue gate as opposed to persons
13 using the Mountain Boulevard gate where a considerable
14 length of Blackstone Street must be traveled before
15 the hospital becomes clearly visable. Apparently,
16 some unfamiliar drivers become "lost" and make wrong
17 turns.

18

19 One disadvantage would be the need to increase man-
20 power requirements to provide proper security on a
21 second access point. A second disadvantage may be the
22 difficulty some buses have in ascending the Keller
23 Avenue hill.

24

25 Traffic assignments to the road system are shown in Fig-
26 ure 14 for existing plus Keller Avenue project traffic.
27 Methodology for this traffic assignment is shown on
28 Table 5.

29

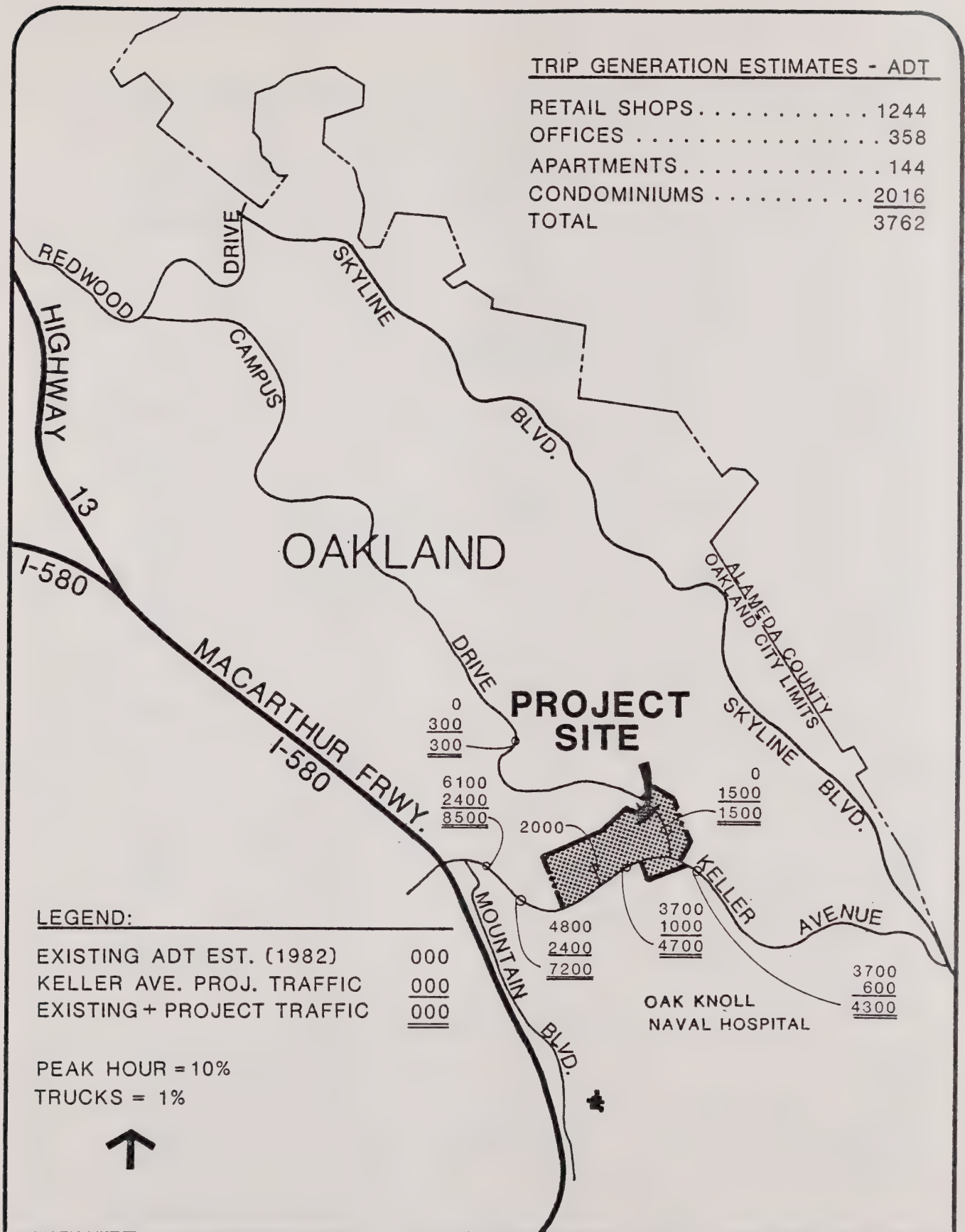
30 Cumulative Traffic Impacts

31

32 Traffic conditions have been assessed for existing plus
33 project traffic plus traffic from the Ridgemont develop-
34 ment, and for estimated 1990 conditions. Development of
35 Ridgemont and completion of Campus Drive between Merritt

TRIP GENERATION ESTIMATES - ADT

RETAIL SHOPS	1244
OFFICES	358
APARTMENTS	144
CONDOMINIUMS	<u>2016</u>
TOTAL	3762



Junior College and Keller Avenue are the major sources of traffic using Keller Avenue in addition to the Keller Avenue Project traffic. No other significant development beyond these levels is foreseen which will effect Keller Avenue.^{1/}

Table 5

TRAFFIC ASSIGNMENT - DAILY
METHODOLOGY

Percent	To and From	Trips
<u>RETAIL</u>		
15%	Keller Avenue Project residences	187
2%	Oak Knoll Naval Hospital	25
20%	West of site	249
20%	Ridgemont project residences	249
40%	East of site	498
3%	Offices	36
<u>100%</u>		<u>1,244</u>
<u>OFFICE</u>		
5%	North of site	18
3%	of retail traffic (10% of office trips)	36
5%	West of site	18
5%	East of site	18
75%	I-580 via Keller Avenue	268
<u>100%</u>		<u>358</u>
<u>RESIDENTIAL</u>		
15%	of retail traffic (8% of residential trips)	187
5%	West of site	108
3%	North of site	58
3%	East of site	58
1%	Oak Knoll Naval Hospital	21
80%	I-580 via Keller Avenue	1,782
<u>100%</u>		<u>2,160</u>

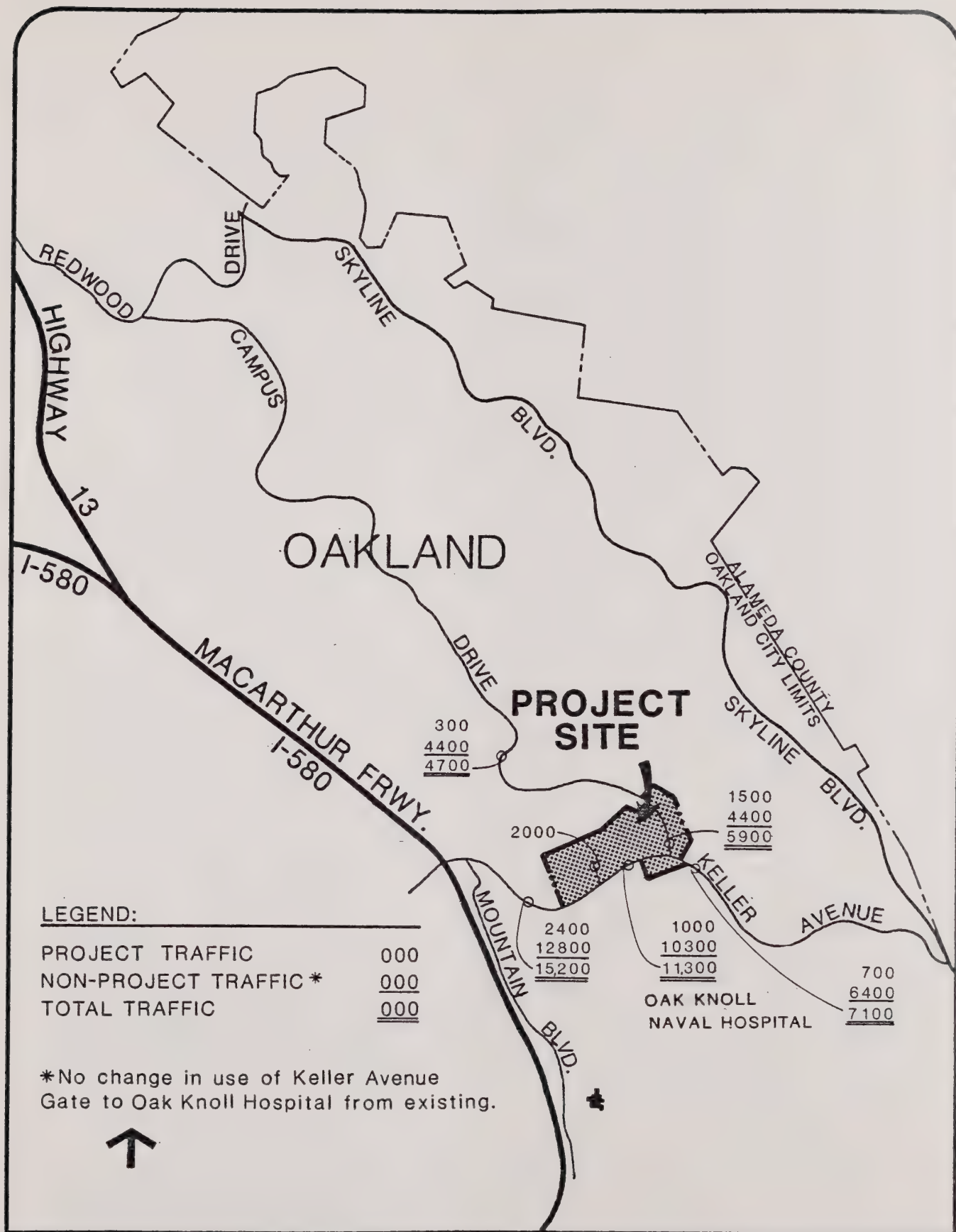
^{1/} Discussion with Willie Yee, Jr. Associate Planner, City Planning Department, City of Oakland.

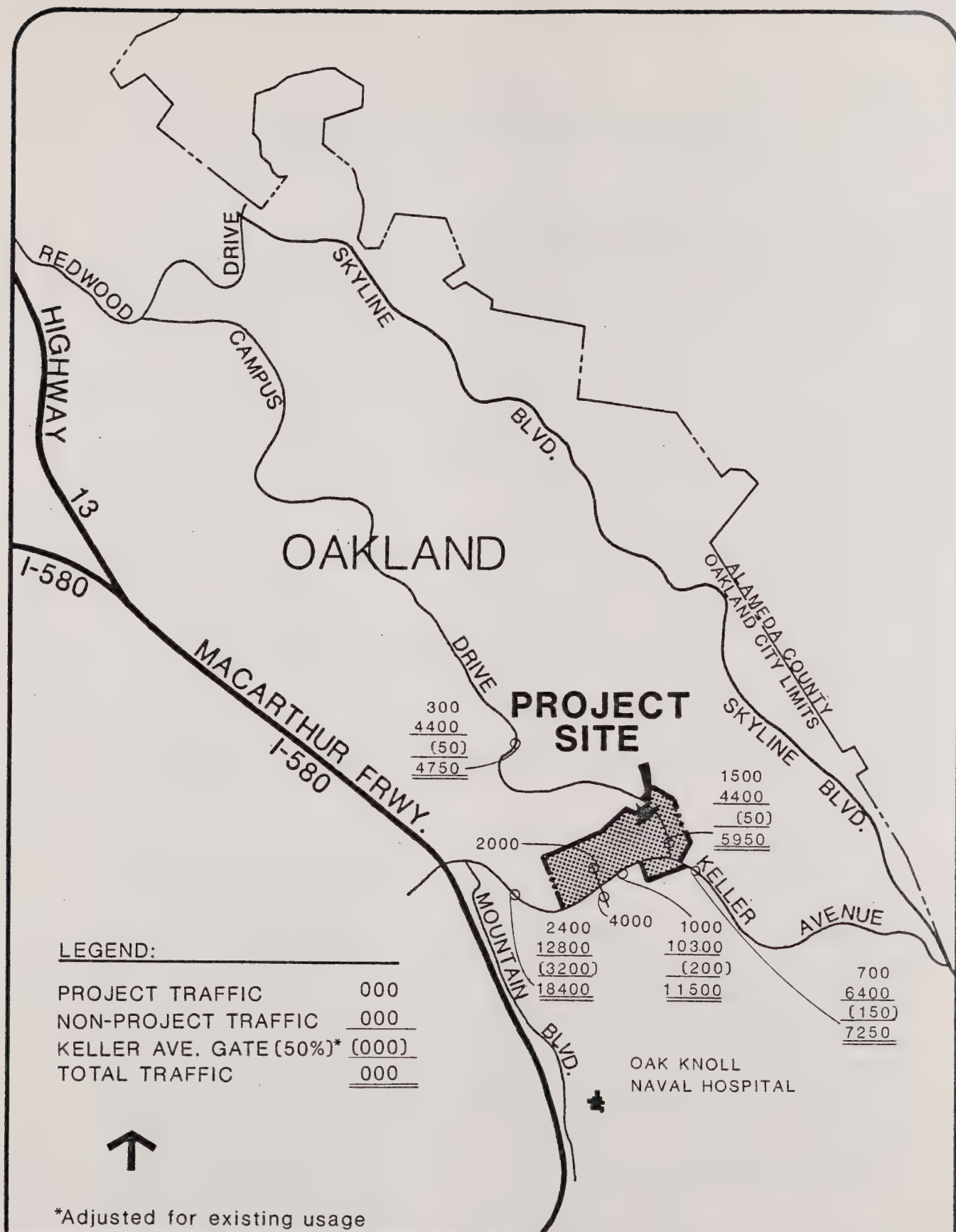
1 The initial evaluation of the impacts on the street system
2 assumed Oak Knoll Hospital traffic to be constant with
3 current levels and directional usage. A supplemental
4 evaluation assumed that fifty percent (50%) of the 8,000
5 daily Hospital trips would use Keller Avenue. Assuming
6 similar directional splits to existing traffic, this would
7 be ninety percent (90%) using Keller Avenue to the west of
8 the Oak Knoll gate and ten percent (10%) using Keller
9 Avenue to the east which translates into 3,600 and 400
10 vehicles per day, respectively. Adjusted for existing
11 usage, the additional traffic using Keller Avenue would be
12 approximately 3,200 and 200 vehicles to the west and east
13 of the Oak Knoll's gate, respectively.

14
15 Cumulative traffic assessments have been used to evaluate
16 the need for signals at the intersections of Keller Avenue
17 with Mountain Boulevard, with the project site entrance
18 and with Campus Drive. Traffic signal warrants were
19 checked using Figure 9-1C of the State Traffic Manual;
20 copies of the warrant sheets are included in the report
21 Appendix C.

22
23 Figure 15 shows estimated year 1990 traffic on Keller
24 Avenue and Campus Drive. Table 6 is a comparison table
25 showing percentage increases to estimated year 1990 traf-
26 fic with and without the Keller Avenue Project and only
27 peak period usage of the Keller Avenue gate to Oak Knoll's
28 Hospital.

29
30 Figure 16 shows estimated year 1990 traffic on Keller
31 Avenue and Campus Drive assuming that the Oak Knoll Naval
32 Hospital road connecting to Keller Avenue serves fifty
33 percent (50%) of the hospital traffic.





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Table 6
COMPARISON OF 1990 TRAFFIC ESTIMATES
WITH AND WITHOUT KELLER AVENUE PROJECT

Location	1990 ADT Keller Avenue Project Traffic		Percent Increase
	Without*	Added*	
Campus Drive North of Keller Avenue	4,400	5,900	25
Campus Drive North of Keller Avenue Project Site	4,400	4,700	6
Keller Avenue East of Campus Drive	6,400	7,100	10
Keller Avenue East of Keller Avenue Project Site	10,300	11,300	9
Keller Avenue West of Keller Avenue Project Site	12,800	15,200	16

* Usage of Oak Knoll Hospital access onto Keller Avenue
Status Quo.

Intersection Analysis

Mountain Boulevard at Keller Avenue - Capacity analysis
was performed for the intersection of Keller Avenue and
Mountain Boulevard. Based upon the field observations the
intersection actually operates similar to the intersection
of two four-lane streets since eastbound drivers function-
ally make two eastbound lanes even though the approach is
only striped as one 20-foot wide lane. The same two-lane
usage occurs on the north leg where southbound drivers
have one very wide lane to create two lanes.

1 The existing four-way stop is operating at capacity Level
2 of Service "A" for both a.m. and p.m. peak periods. Addi-
3 tional peak-hour vehicles from the Keller Avenue project
4 to this intersection do not change the Level of Service.
5 Project traffic added to the existing p.m. peak hour of
6 1,214 vehicles entering the intersection results in an
7 increase of about twenty percent (20%). Considering 1990
8 estimated traffic levels, the project will amount to less
9 than ten percent (10%) of the total.

10
11 Based on intersecting four-lane roadways, the maximum
12 capacity of the four-way stop would be about 3,600 vehi-
13 cles entering per hour. Assuming a 60/40 directional
14 split, the capacity would be reduced to about 3,200 vehi-
15 cles per hour. Based on LOS D(0.89) being acceptable, the
16 four-way stop would be able to serve $3,200 \times 0.89 = 2,850$
17 vehicles per hour. By subtracting existing conditions
18 from Level of Service "D" volumes leaves some 1,636 vehi-
19 cles per hour of remaining capacity. The Keller Avenue
20 Project will consume about fifteen percent (15%) of the
21 remaining four-way stop capacity.

22
23 The analysis of traffic signal warrants at Keller Avenue
24 and Mountain Boulevard indicate that the addition of
25 traffic from the Keller Avenue Project does not require
26 signalization at this intersection. Warrant criteria are
27 still not met in 1990 unless the use of the Keller Avenue
28 gate to Oak Knoll Hospital increases dramatically over
29 existing usage. Even though the minimum warrants are met
30 there is every reason to believe that the four-way STOP
31 control will continue to function satisfactorily.

32
33 Capacity calculation of the four-way STOP under 1990 traf-
34 fic conditions shows a Level of Service "B" ($2,082/3,200 =$
35 0.65) assuming existing usage of the Keller Avenue

entrance to Oak Knoll HOspital. Under conditions where fifty percent (50%) of the Oak Knoll traffic used Keller Avenue Level of Service "C" ($2,445/3,200 = 0.76$).

Keller Avenue at Route 580 Off-Ramp - Analysis of this intersection shows that traffic signal warrants are still not met under 1990 traffic conditions. While there may be some long-term advantages to installing a STOP sign to control eastbound Keller Avenue traffic at the off-ramp, there is no need for signalization.

Site Entrance at Keller Drive - The 2,000 vehicles per day (1,000 in/1,000 out) generated from the condominiums do not require signalization at Keller Avenue under existing conditons and it is only with the addition of non-project volumes by 1990 that the Combination warrant where eighty percent (80%) of the Minimum Vehicular and Interruption of Continuous Flow warrants are reached. If Oak Knoll's access to Keller Avenue is increased to fifty percent (50%) of all hospital traffic then minimum level of the Interruption of Continuous Flow warrant is reached.

Essentially, if a signal were ever to be installed at this intersection, it would be primarily to serve Oak Knoll Hospital traffic turning left onto Keller Avenue during the p.m. peak period. A signal would normally not be required for the condominium traffic since it is largely right turns out and left turns in, which are both made with relative ease. For instance, if the project driveway were designed to be some 500 feet to the east of the Oak Knoll Hospital entrance to create a new T-intersection on the north side of Keller Avenue, no signal would be needed. However, the signalization of Oak Knoll Hospital intersection may still be consideration to serve p.m. peak period existing vehicles, particularly if that gate has a significant increaase in usage.

1 Campus Drive at Keller Avenue - The Minimum Vehicle Volume
2 warrant is met for this T-intersection after traffic from
3 Caballo Hilles and Merritt Junior College are added to
4 Keller Avenue project traffic. The major traffic move-
5 ments associated with Campus Drive are right turns out and
6 left turns in. The left turn out movement, which is the
7 most difficult, is relatively small.

8
9 Therefore, there is a good chance that signalization would
10 not be needed if the opportunities for drivers turning
11 left from Campus Drive are enhanced. Construction of an
12 acceleration lane in the easterly median of Keller Avenue
13 to serve these left turning movemens is a solution which
14 provides a viable alternative to signalization and does
15 not unnecessarily delay the major movements.

16 17 Mitigation

18
19 Traffic Signal warrant evaluation of the Mountain/Keller
20 and Route 580 off-ramp/Keller intersection indicate that
21 no signals are warrant for 1990 traffic and that STOP sign
22 control will be adequate. No other mitigating measures
23 are recommended for these intersections.

24
25 While a traffic signal is not warranted for Keller Avenue
26 Project traffic at the entrance road to the condominiums,
27 it becomes marginally warranted with 1990 traffic vol-
28 umes. If a traffic signal is installed, it would be pri-
29 marily for the benefit of the Oak Knoll Hospital exiting
30 left turn traffic particularly durant the p.m. peak
31 period. Existing p.m. peak-hour left turns from Oak Knoll
32 amount to 103 vehicles compared to opposite left turns
33 from the Keller Avenue project of 26 vehicles per hour
34 (80% to 20%). If the Oak Knoll Hospital traffic usage of
35 Keller Avenue is emphasized and reaches fifty percent

1 (50%) of the daily total, the left turn ratio of Oak Knoll
2 to Keller Avenue project becomes 330/31 or ninety percent
3 (90%) to ten percent (10%). Use of these percentages for
4 benefitted traffic would be one method of assigning signal
5 costs. The option to relocate the Keller Avenue Project
6 entrance focuses any signalization requirements on Oak
7 Knoll traffic. The Keller Avenue Project would be
8 entirely responsible for constructing a median left turn
9 lane serving eastbound drivers turning left into the
10 development.

11
12 At Campus Drive, the recommended construction of an accel-
13 eration lane serving southbound to eastbound left turns
14 from Campus Drive to Keller Avenue would be the responsi-
15 bility of the Keller Avenue Project to coincide with the
16 completion of Campus Drive.

17
18 Sight distances have been checked in the field along
19 Keller Avenue, at the location of Campus Drive and at the
20 site entrance, and found to be in excess of 600 feet,
21 which is more than adequate for a 50-mile per hour driving
22 speed. There is some obstruction of sight distance across
23 the median strip of Keller Avenue because of the occa-
24 sional redwood trees that have been planted in the
25 median. As these trees grow larger, if they are to
26 remain, the lower branches should be trimmed on those
27 within 600 feet of any intersection.

28
29 In order to maximize the sight distance for drivers
30 approaching Keller Avenue on Campus Drive it will be
31 necessary that the pavement grade on Campus Drive be as
32 high as or higher than the adjoining pavement grade on
33 Keller Avenue.

1 At both intersections with Keller Avenue, at Campus Drive
2 and at the site entrance to the condominiums, there should
3 be unobstructed site distance within a triangle defined as
4 shown on Figures 7-406.1 of the State Highway Design
5 Manual. The base distance on the side road should be
6 30 feet, measured from the curb line on Keller Avenue; the
7 length along Keller Avenue should be a minimum of 350 feet.

8
9 Stop signs should be installed at the time of development
10 to control traffic entering Keller Avenue from the condo-
11 minium access road and from Campus Drive. A stop sign
12 should also be installed to control vehicles exiting from
13 the retail/commercial area on the east side of Campus
14 Drive.

15
16 Pedestrian sidewalks or pathways are planned within the
17 development and on portions of Keller Avenue and Campus
18 Drive to enhance pedestrian activity. This includes
19 Keller Avenue where buses may be routed sometime in the
20 future. Crosswalks should be delineated at the intersec-
21 tion of Campus Drive and Keller Avenue.

22 23 4.14.0 Energy

24 25 Setting

26
27 The project site is currently undeveloped and therefore no
28 energy is used on the site. However, the project site is
29 surrounded by developed urban lands where energy is used.

30 31 Impacts

32
33 Future energy use by the proposed project can be divided
34 into three categories: construction use; on-site use; and

1 transportational use. The estimated quantities of energy
2 used in these three categories are calculated below.

3
4 Construction activities are expected to consume approxi-
5 mately 24.4 billion Btu of energy.^{1/} The source of
6 energy used in construction will be gasoline, diesel fuel,
7 asphalt, electricity, and lubricants.

8
9 The project builders must comply with Title 24 of the
10 California State Administrative Code which limits the
11 amount of energy that is likely to be used on-site by
12 future occupants. The maximum allowable energy that will
13 be used per square foot of conditioned floor area is
14 controlled by requiring the use of energy conservation
15 measures in the building design. According to Title 24,
16 the maximum allowable on-site energy consumption for the
17 project is approximately 10.2 billion Btu per year.^{2/}
18 The source of the energy used on-site will primarily be
19 natural gas and electricity.

20
21 The final component of energy consumption is from trans-
22 portation of future residents, employees, and visitors to
23 and from the project site. Based on an estimated 3,800
24 ADT as described in the Transportation Section 4.13.0, an
25 average trip length of 5 miles and an average fuel economy
26 of 20 miles per gallon, approximately 950 gallons of fuel
27 will be used per day or approximately 350,000 gallons per
28 year.

29
30 As the above calculations show, the implementation of the
31 proposed project will result in significant energy use.
32 However, the amount of energy that will be used by the
33 development is normal for this sized new development, and
34 less than that used in a similar sized older development
35 due to new energy conservation techniques.

1
2
3 1/ Based on an energy use of 2,000 Btu per dollar of
4 non-residential construction and 1,700 Btu per dollar
5 of residential construction (Federal Energy Adminis-
6 tration, Energy Use in the Contract Construction
7 Industry, U.S. Department of Commerce, Report
8 No. PB-245 422/1BA, February 18, 1975).
9

10 Calculations:

11
12 Non-Residential Construction:
13

14 2,000 Btu per construction dollar
15 x \$2.4 million = 4.8 billion Btu
16

17 Residential Construction:
18

19 1,700 Btu per construction dollar
20 x \$11.5 million = 19.6 billion Btu
21

22 Total = 24.4 billion Btu
23
24
25
26

27
28 2/ Based on a maximum of 141,000 Btu per square foot of
29 conditioned office space floor area per year; 214,000
30 Btu per square foot of retail grocery space; 200,000
31 Btu per square foot of other retail space; and 15,300
32 Btu per square foot of multi-family buildings with
33 common walls but no common floors and ceilings.
34 (State of California, Energy Commission, Part 2,
35 Title 24 of the California Administrative Code,
36 Sacramento, 1978, and amended 1980 and 1981).
37

38 Calculations:

39
40 Offices: 24,000 sq. ft. x
41 126,000 Btu/sq. ft./yr. = 3.0 billion Btu/yr.
42

43 Retail Grocery: 8,500 sq. ft.
44 x 214,000 Btu/sq. ft./yr. = 1.8 billion Btu/yr.
45

46 Other Retail: 6,000 sq. ft. x
47 200,000 Btu/sq. ft./yr. = 1.2 billion Btu/yr.
48

49 Residential: 274,000 sq. ft.
50 x 15,300 Btu/sq. ft./yr. = 4.2 billion Btu/yr.
51

52 TOTAL 10.2 billion Btu/yr.

1 Mitigation

2

3 The project's sponsor should consider other energy conser-
4 vation measures, in addition to those required by Title
5 24. Such measures would include, but are not necessarily
6 limited to, the following:

7

8 o The use of renewable rather than non-renewable energy
9 resources whenever possible during construction.

10

11 o Double or triple glazing and/or heat reflective glass.

12

13 o High efficiency fluorescent lighting.

14

15 o The use of active and passive solar heating and cool-
16 ing devices.

17

18 Note: Some of these techniques are costly and their
19 benefits should be weighed against the provisions
20 of affordable housing.

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1 5.0 UNAVOIDABLE ADVERSE IMPACTS

2
3 5.1.0 Unavoidable Impacts Which Can Be Reduced To An
4 Insignificant Level Through Mitigating Measures
5

6 Acoustics
7

8 By 1990 the noise levels outside the proposed residences
9 nearest to Keller Avenue may exceed the level (60dBA)
10 beyond which the California State Office of Noise Control
11 requires that interior noise levels be reduced to 45 dBA
12 through construction techniques. However, according to
13 Charles M. Salter Associates, Inc., indoor noise levels in
14 these units could be controlled to an Ldn not in excess of
15 45 dBA by providing mechanical ventilation which would
16 allow windows to be closed.
17

18 Construction noise is another unavoidable impact. How-
19 ever, by restricting construction hours to 8:00 a.m. to
20 5:00 p.m. on weekdays, and by adequately muffling and
21 maintaining construction equipment, construction noise
22 could be mitigated to a point of insignificance.
23

24 Transportation
25

26 Vehicular traffic from the proposed project will incre-
27 mentally increase traffic levels and congestion along
28 Keller Avenue and Campus Drive. However, these impacts
29 could eventually be controlled by stop signs, turn lanes,
30 and acceleration lanes.
31
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1 5.2.0 Unavoidable Impact Which Can Not Be Reduced To An
2 Insignificant Level

3
4 Vegetation and Wildlife

5
6 The native habitat of most of the project site will be
7 destroyed even without the proposal project, as a result
8 of the extensive fill which has already been approved for
9 the project site.

10

11 Visual

12

13 The project will significantly alter the visual character
14 of the site by tranforming it from open space land to
15 urban land.

16

17 Energy

18

19 If the project is implemented, significant amounts of
20 energy will be used. However, the amount that will be
21 used is normal for this sized new development.

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1 6.0 GROWTH INDUCING IMPACTS

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3 The residential portion of the proposed project has been
4 planned in response to the local demand for affordable
5 housing, and employment areas already exist in the project
6 vicinity and new ones are planned. Therefore, it is not
7 expected that new growth will be needed to supply employ-
8 ment areas for the 607 future residents of the develop-
9 ment.^{1/} New temporary jobs will be created by the pro-
10 posed project. However, since the local construction
11 industry is currently in a slump, these jobs should not be
12 considered growth.

13

14 Some growth will be needed to provide services for the
15 proposed housing. However the proposed retail and commer-
16 cial portions of the project will provide many of these
17 services.

18

19 The jobs created by future businesses and shops will
20 probably not induce further growth since it is a small
21 development that should yield only about 80 employees, and
22 many of these employees may live in the residential por-
23 tion of this project or in the larger new residential
24 project to the north.

25

26 ^{1/} According to the 1980 Census report for Alameda
27 County, there were 2.53 persons per household.
28 Calculations: 2.53 persons/household x 240 households
29 = 607 persons
30
31

1 7.0 ALTERNATIVES

2

3 No Project Alternative

4

5 A decision not to implement the proposed project is an
6 alternative which must be considered seriously on its own
7 merits, and because it is required by the State EIR Guide-
8 lines, the implication of this alternative is that no
9 change in the existing uses would take place.

10

11 A decision not to proceed would result in no residential,
12 office, or retail development on the site at this time.
13 None of the impacts associated with the development would
14 occur. However, the impacts associated with the grading
15 must occur in order that the rest of the Ridgemont project
16 proceed. Since the project site is planned and zoned for
17 this general type of development, eventually a similar
18 development would probably occur on this site.

19

20 Alternative Location

21

22 All components of this development (residential, office,
23 and retail) have been planned as a response to local
24 market demands. There are no other suitable locations in
25 the near vicinity for this type of development. If the
26 development is moved to another area, the impacts asso-
27 ciated with the proposed project will not occur in the
28 proposed location. However, most of these impacts will
29 probably occur wherever the project is located. In addi-
30 tion, if the project is located in another area, the
31 demand for this type of development may still exist in the
32 vicinity of the Keller Avenue Project site.

33

34

35

1 Alternative Density and Configuration

2

3 Increasing residential density would cause a direct
4 increase in most of the environmental impacts discussed in
5 this EIR, particularly in traffic, noise, energy, and
6 visual aesthetics. However, this alternative might pro-
7 vide more affordable housing on the site.

8

9 Decreasing the residential density would decrease most of
10 the environmental impacts discussed in this EIR. However,
11 due to the fixed costs of the residential development,
12 such as land cost, and certain development costs, this
13 alternative might result in higher home prices and
14 apartment rents.

15

16 An alternative configuration with more or with less office
17 and/or retail space would not have a great affect on the
18 environmental impacts. The office and retail uses use
19 more energy per acre and generate more ADT and noise.
20 However, since the office and retail uses are expected to
21 serve the vicinity, if this office and retail space is
22 decreased, more local residents will have to travel the
23 greater distances to other professional offices and retail
24 stores which will increase the average trip length, and
25 therefore, traffic volumes, noise levels, and energy
26 consumption in the area. If the office and retail space
27 is increased, the average trip length in the area may
28 decrease. Although it is difficult to quantify, this
29 indirect affect of changing the trip length in the area as
30 the ratio of residential space to office and retail space
31 is changed, will to some degree offset the direct effects
32 of changing the ratio of these spaces.

33

34 The project site has been approved for 56 residential
35 units on individual lots plus a 5.4-acre commercial area.

1 This alternative is less dense than the proposed project.
2 The impacts of this type of alternative is discussed above.

3

4 Conclusion

5

6 Minor changes could be made to the densities and ratio of
7 the residential, professional office, and retail uses
8 without significantly changing the environmental impacts.

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1 8.0 RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S
2 ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF
3 LONG-TERM PRODUCTIVITY
4

5 The long-term effects of the proposed development
6 include: an irreversible change in land use; a change in
7 the visual aspects of the area; an increase in traffic and
8 noise levels in the vicinity; the location of homes and
9 employment near a geologic fault; and an increase in the
10 local need for public facilities, utilities, and ser-
11 vices. However, the project site's zoning allows for this
12 type of development. Similar long-term environmental
13 effects would occur for most developments which would be
14 allowed on this site under its current zoning. The need
15 for affordable housing in this area is an important
16 balancing factor in considering the long-term environ-
17 mental effects of the proposed development.
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1 9.0 EIR AUTHORS AND PERSONS CONTACTED

2
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4
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24 - Richard Illingsworth, RCE #21763

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27
28 o City of Oakland:

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30 - Norman Lind, Director of City Planning, Planning Dept.
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34 - Michael Pickering, Transportation Engineer, Traffic
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48 - Al Cornwell

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50 o Sandy and Babcock, San Francisco, California:

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52 - William Lyons

- 1 o WSI Building Company, Inc., Pleasant Hill, California:
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- 3 - Jerry Schauffler
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- 5 o Anthony M. Guzzardo and Associates, Inc.
- 6
- 7 - Greg Randall
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APPENDICES

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Appendix A

Notice of Preparation, Initial Study, Comments

CITY OF OAKLAND



CITY HALL • 14TH AND WASHINGTON STREETS • OAKLAND, CALIFORNIA 94612

Planning Department

December 10, 1982

Notice of Preparation

W.S. I. Builders proposes to construct a development consisting of 224 town-houses, 38,500 square feet of office and retail space, and 16 apartments on the 34.6 acre site located on Keller Avenue. This site is included within the approved Caballo Hills (Ridgemont) Subdivision, and was examined generally by the Environmental Impact Report (EIR) prepared and certified for the project in 1979. Section 15067-5 of the Guidelines for Implementation of the California Environmental Quality Act (CEQA) of 1970 allows the preparation of a supplement to an EIR if only minor additions or changes are necessary to make the previous EIR adequately apply to the project. The City of Oakland, as lead agency, will prepare a supplement to the Caballo Hills EIR for the development proposed by W.S.I. Builders.

The City Planning Department has reviewed the proposed project and has determined that the Caballo Hills EIR adequately addresses impacts connected with public services, utilities, seismic hazards, air quality, climate vegetation, wildlife, archaeological and historic resources. No additional discussion of the above items will be required. The supplemental EIR will update the sections of the Caballo Hills EIR dealing with hydrology and acoustics. A new section examining the visual, traffic, and energy impacts, and possible mitigation measures, will be prepared.

If you would like to comment on the scope and content of the supplemental EIR, please do so in writing as soon as possible, but not later than 45 days after receipt of this notice. Please refer to case ER 82-30 and send your comments to Willie Yee, Jr., Associate Planner, City Planning Department, 1421 Washington Street, Oakland, California, 94612. Please also provide the name of a contact person in your agency, organization or group.

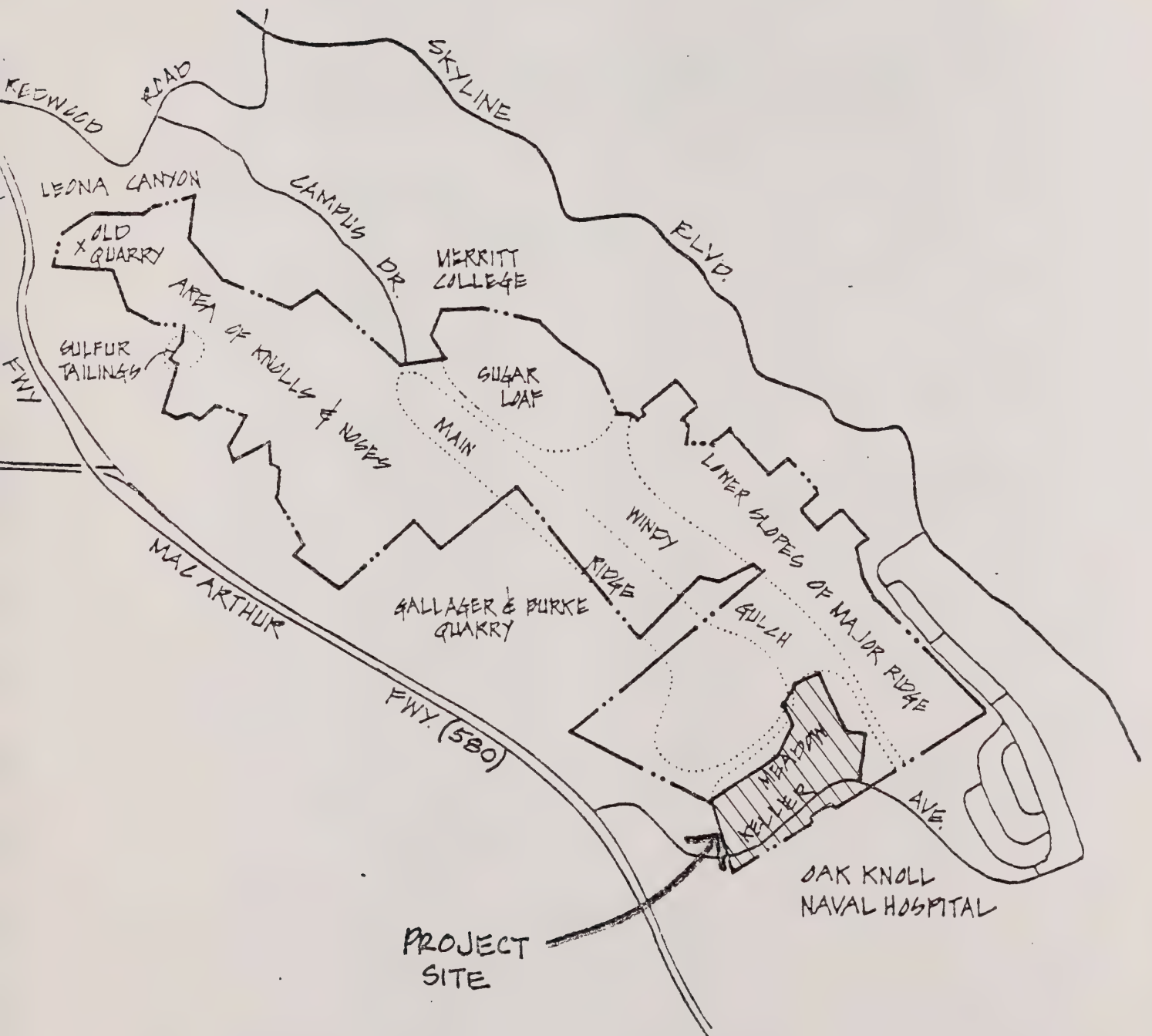
Sincerely,

A handwritten signature in cursive script that reads "Norman J. Lind".

NORMAN J. LIND
Director of City Planning

NJL:WY:cjr

Attachment



INITIAL STUDY
California Environmental Quality Act

I. DESCRIPTION OF THE PROJECT FFA attached residential units with 482 parking spaces;
project will be served by a private street system with a main entrance off of
Keller Avenue.

II. DESCRIPTION OF THE ENVIRONMENTAL SETTING 34.6 acre site consisting of a basin area
next to Keller Avenue. The Rifle Range Branch of Arroyo Viejo Creek traverses
the site. Site is covered with grassy shrubs and scattered willows, coastline
oaks and elders. Site is surrounded by single- and multi-family residential
uses, and vacant land. Oak Knoll Naval Hospital is located across Keller Avenue.

III. ENVIRONMENTAL EFFECTS	Yes	Maybe	No	Source or Explanation
<u>Geophysical. Will the proposal result in:</u>				
1. Unstable earth conditions, including erosion or slides, or changes in geologic substructures either on or off the site?		X		See attachment to initial study
2. Major changes in topography or ground surface relief features?	X			"
3. Construction on loose fill or other unstable land which might be subject to slides or liquefaction during an earthquake?		X		"
4. Construction within one quarter mile of an earthquake fault?	X			"
5. Substantial depletion of a nonrenewable natural resource or inhibition of its extraction?			X	"
<u>Air and Water. Will the project result in:</u>				
6. Substantial air emissions, deterioration of ambient air quality or the creation of objectionable odors?			X	
7. Substantial degradation of water quality?		X		See Attachment to Initial Study
8. Changed drainage patterns or increased rates or quantities of surface water runoff?	X			"
9. Interception of an aquifer by cuts or excavations?		X		"
<u>Biotic. Will the project:</u>				
10. Reduce the quantity of fish and wildlife in the project vicinity, interfere with migratory or other natural movement patterns, degrade existing habitats or require extensive vegetation removal?	X			"
11. Reduce the numbers of any rare or endangered species of plants or animals?		X		"
<u>Land Use and Socio-Economic Factors. Will the project:</u>				
12. Conflict with approved plans for the area or the Oakland Comprehensive Plan?			X	
13. Carry the risk of an explosion or the release of hazardous substances, including oil, pesticides, chemicals or radiation?			X	
14. Require relocation of residents and/or businesses?			X	
15. Cause a substantial alteration in neighborhood land use, density or character?		X		See attachment to Initial Study
16. Generate substantially increased vehicular movement or burden existing streets or parking facilities?		X		"
17. Elicit substantial public controversy or opposition?		X		"
18. Have a substantial impact on existing transportation systems or circulation patterns?		X		"
19. Result in a substantial increase of the ambient noise levels for adjoining areas?			X	
20. Impose a burden on public services or facilities including fire, solid waste disposal, police, schools or parks?			X	
21. Impose a burden on existing utilities including electricity, gas, water, and sewers?			X	
22. Destroy, deface or alter a structure, object, natural feature or site of historic, architectural, archeological or aesthetic significance?			X	
23. Involve an increase of 100 or more feet in the height of any structure over any previously existing adjacent structure?			X	

Energy: Will the project: Source or
Yes Maybe No Explanation

24. Use or encourage use of substantial quantities of fuel or energy? X

IV. MANDATORY FINDINGS OR SIGNIFICANCE (EIR required if answer to any of the following questions is "yes" or "maybe".)

- | | Yes | Maybe | No |
|--|-----|-------|----|
| a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | X | | |
| b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.) | | | X |
| c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.) | X | | |
| d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | | | X |

If any "yes" or "maybe" answers are marked, describe the specific nature of the environmental effects involved and their relationship to the project. (Use an attached sheet if necessary.)

V. DETERMINATION:

On the basis of this initial evaluation:

- ☐ I find the proposed project WILL NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.
- ☒ I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Name Willie Yee Jr. Date July 1, 1982
 Title Associate Planner

ATTACHMENT TO INITIAL STUDY

A. ITEMS MARKED "YES":

2. The basin area will be filled with approximately 1.6 million cubic yards of material generated by construction of the Campus Drive extension.
3. The Chabot Fault (inactive) crosses the northern portion of the site.
8. Placing fill within the basin area will alter the site's present drainage pattern. A portion of the Rifle Range Branch of Arroyo Viejo Creek will be culverted and buried under fill.
10. A significant portion of the sites' existing vegetation will be removed, thus reducing the quantity of wildlife habitat. Although the project includes extensive new landscaping, the introduction of residents and domestic animals will discourage continued use of the site by wildlife.

B. ITEMS MARKED "MAYBE":

1. & 3. The stability of the newly placed fill will be dependent upon how that material is engineered and on subsequent soils tests.
7. Downstream water quality may suffer from surface runoff and erosion emanating from the site.
9. The presence of any aquifers must be determined.
11. The site is within the range of the Alameda Stripped Racer -- a designated endangered species.
15. The introduction of 224 attached residential units represents a significant change in neighborhood land use and character.
16. - 18. The project will generate substantially increased traffic, along with that connected with the remainder of the Ridgemont project, may burden existing streets and transportation systems.
17. Proposals for other multi-family developments in the hill area have met public opposition.

CITY OF OAKLAND
Interoffice Letter

To: City Planning Attention: Norman J. Lind Date: December 22, 1982

From: Director of Public Works

Ridgemont @ Keller Avenue
Subject: ER 82-30

In response to a December 10, 1982 notice of preparation of a supplemental EIR for the subject project the following should be covered in detail.

DRAINAGE

The EIR include discussion of a location and maintenance emergency flood way for Horseshoe Creek.

RECEIVED

SANITARY SEWERS

Proposal should be dealt with in detail.

DEC 24 1982

STREET SYSTEM

There should be detail on street widths, a need for pedestrian facilities and the street configuration and how it would lend itself to adequate circulation.

**CITY PLANNING COMMISSION
ZONING DIVISION**


JAMES E. McCARTY

JDC/hlm

cc. Willfe Yee

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
1111 JACKSON STREET, ROOM 6040
OAKLAND 94607

Phone: Area Code 415
464-1255



RECEIVED

JAN 3 1983

CITY PLANNING COMMISSION
ZONING DIVISION

December 31, 1982

File No. 2198.09(TGR)tmh

RECEIVED

JAN 3

Willie Yee, Jr.
City of Oakland
1421 Washington Street
Oakland, CA 94612

Dear Mr. Yee:

Subject: NOP of Supplemental EIR for the Keller
Avenue Property Development - SCH#79052405

We feel that the supplemental EIR should update the geotechnical assessment of the subject site, particularly with respect to potential erosion and sedimentation impacts to offsite watercourses. Additionally, unstable slopes and landslide areas should be identified. Appropriate mitigation measures should be provided.

Thank you for the opportunity to comment at this time.

Sincerely,

Theresa G. Rumjahn

THERESA G. RUMJAHN
Sanitary Engineering Technician

cc: Anna Polvos
State Clearinghouse

DEPARTMENT OF TRANSPORTATION

P.O. BOX ~~3246~~ ~~3246~~ 7310SAN FRANCISCO ~~94119~~ 94120

(415) 557-1840



RECEIVED

JAN 1

January 3, 1983

RECEIVED

JAN 7 1983

ALA-580-R37.8
SCH #7905 2405

Willie Yee, Jr.
Associate Planner
City Planning Dept.
1421 Washington St.
Oakland, California 94612

CITY PLANNING COMMISSION
ZONING DIVISION

Re: Notice of Preparation for Supplemental EIR for Caballo Hills

Dear Mr. Yee,

Thank you for the opportunity to review the above-referenced document.
The following comments were generated upon our review:

The environmental document should address:

- 1) The traffic impact in terms of:
 - a) trip generation, distribution and assignment;
 - b) ADT, and AM and PM peak hour volumes on all significantly affected streets and highways including all through and turning movements for freeway ramp/crossroad intersections and controlling intersections for the existing and future conditions, the latter with project traffic, and with traffic generated by all approved developments in the area cumulatively; coverage should include all traffic that would affect the facilities evaluated, and should not be limited to projects under the jurisdiction of the lead agency;
 - c) Proposed mitigation, including modal alternates and highway improvements -- and the proposed financing mechanisms for same.

We look forward to reviewing the DEIR. We expect to receive a copy from the State Clearinghouse. However, to expedite the review process, you may forward an advance copy to:

Darnall W. Reynolds
District CEQA Coordinator
Caltrans District 04
P O Box 7310
San Francisco, CA 94120

If you have any questions regarding these comments please contact Veda Lewis of my staff at (415) 557-8542.

Sincerely,

DARNALL W. REYNOLDS
District CEQA Coordinator

DEPARTMENT OF HEALTH SERVICES

2151 BERKELEY WAY
BERKELEY, CA 94704
415/540-2665



January 6, 1983

RECEIVED
JAN 10 1983
CITY PLANNING COMMISSION
ZONING DIVISION

Mr. Willie Yee, Jr.
Associate Planner
OAKLAND PLANNING DEPARTMENT
1421 Washington Street
Oakland, California 94612

SUBJECT: City of Oakland's NOP for Keller Avenue Property
Case ER 82-30 - SCH #79052405

Dear Mr. Yee:

The Department has reviewed the subject environmental document and offers the following comments.

In response to your Notice of EIR Preparation, we are enclosing a document prepared by the Noise Control Program entitled, "Guidelines for Noise Study Reports as Part of Environmental Impact Reports", which provides some general guidelines as to what this office considers important in EIRs.

Specifically, the supplemental EIR dealing with acoustics should provide estimates of the increases in traffic resulting from the project, and the noise impacts of that traffic on the project site and the existing or proposed land uses between the site and the MacArthur Freeway. Of particular concern in this regard is the truck traffic likely to be needed to service the office and retail portion of the project.

If you have any questions or need further information concerning these comments, please contact Dr. Jerome Lukas of the Noise Control Program, Office of Local Environmental Health Programs, at 2151 Berkeley Way, Room 613, Berkeley, CA 94704, 415/540-2665.

Stuart E. Richardson, Jr., R.S., Chief
Office of Local Env. Health Programs

Jerome S. Lukas, Ph.D.
Coordinator
NOISE CONTROL PROGRAM

Enclosure

cc: Environmental Health Division

State Clearinghouse

Guidelines for Noise Study Reports as Part of Environmental Impact Reports

California Office of Noise Control

California Department of Health Services
2151 Berkeley Way
Berkeley, California 94704

May 1982

Because complaints about environmental noise are so frequent, the Office of Noise Control recommends that every project with a potential for increasing environmental noise levels or which may be affected by existing or future noise sources should have a Noise Study Report. This report assesses how noise levels associated with the project may affect people. The information contained in the Noise Study Report should be summarized in the Environmental Impact Report or Environmental Impact Statement, and kept on file by the lead agency for review by those with a specific interest in noise.

The attached is designed to help those who prepare Noise Study Reports and Environmental Impact Reports and reviewers of Environmental Impact Reports. Because there are so many different combinations of noise sources and receivers (people impacted by those sources), it is virtually impossible to develop guidelines that cover all situations. Nevertheless, the guidelines should help to bring some consistency to the way noise information is presented in environmental documents.

Suggested Contents of a Noise Study Report

- I. A brief description of the project in terms of its effect on the noise environment and a description of the existing noise environment and its impact upon the project (homes near a freeway, for example).
- II. Two scale maps -- one showing the existing setting and the proposed project with adjacent land uses, receptors, and noise sources identified, and the second map showing the future condition (use a time span of no less than 10 years, unless the project's life span is less) with the proposed project and proposed land uses, receptors, and noise sources identified.
- III. A detailed survey of the existing noise environment.
 - A. The noise survey should encompass the proposed project area and must include any noise sensitive receptors, both near and far. The survey should establish the existing ambient noise level which may then be used to evaluate compliance of the proposed project with applicable noise standards. The standards should be local (city, county) but in their absence state or federal standards may be used. The rationale for the selection of noise survey sites should be included in the report.
 - B. The survey should cover the time periods when the noise environment may be affected by the proposed project.
 - C. The survey should encompass enough days to be representative of the existing "normal" noise environment. Discussion of the similarity or dissimilarity of the noise environment during the survey period with that during other times of the year should be included.
 - D. For the time periods measured, the reported noise data should include the L_{eq} , L_1 , L_{10} , L_{50} , L_{90} , and identification of typical noise levels emitted by existing sources. If day and night measurements are made, report the L_{dn} also. L_{dn} is approximately equal to CNEL; either descriptor may be used. It is imperative that the descriptor conform to that used in the appropriate standard.
 - E. Summarize the present environment by providing a noise contour map showing lines of equal noise level in 5 dB steps, extending down to $L_{dn} = 60$. In quiet areas lower contours should be shown also.
 - F. Identify the noise measurement equipment used in the survey by manufacturer, type, and date of last calibration.
- IV. A description of the future noise environment for each project alternative. The scope of the analysis and the metrics used will depend on the type of project, but as a minimum the following information must be provided:
 - A. Discussion of the type of noise sources and their proximity to potentially impacted areas.
 - B. Operations/activity data:
 1. Average daily level of activity (traffic volume, flights per day, hours on per day, etc.).
 2. Distribution of activity over day and nighttime periods, days of the week, and seasonal variations.
 3. Composition of noise sources (% trucks, aircraft fleet mix, machinery type, etc.).

4. Frequency spectrum of sources (1/3 octave band data are preferable).
 5. Any unusual characteristics of the sources (impulsiveness, tonality, etc.).
 - C. Method used to predict future levels.
 1. Reference to the prediction model used, if standard (e.g., FHWA-RD-77-108, etc.).
 2. If corrections to a standard model are made or empirical modeling is used, state the procedure in detail.
 3. Show typical levels (e.g., L_1 , L_{10} , etc.) at the receptors.
 4. Give any other data yielded by the model you used.
 - D. Contours of future levels should be included (down to $L_{dn} 55$ where applicable), and superimposed over projected population (receptor) densities.
- V. Impact
- A. Quantify anticipated changes in the noise environment by comparing ambient information with estimated source emissions. Evaluate the changes in light of applicable standards.
 - B. Discuss how this project relates to the Noise Element of the applicable general plan.
 - C. Discuss the anticipated effects of increased noise levels (speech interference, sleep disturbance, disruption of wildlife habitat, etc.).
- VI. Mitigation
- A. Discuss how adverse noise impacts can be mitigated, suggesting alternative techniques for mitigation, their relative effectiveness, and feasibility of implementation. Provide a table listing the most and least effective techniques. For this table, effectiveness should be defined in terms of the number of people being exposed to noise at some given level.
 - B. Responsibility for effectuating the mitigation measures should be assigned.
 - C. Discuss any noise impacts that cannot be mitigated, and why mitigation is not feasible.

Summarization of Noise Study Reports in Environmental Impact Reports or Statements

Information included in the Environmental Impact Report or Statement should be a summary of the noise study. The following information must be included:

- A. Maps showing the existing setting and the proposed project with adjacent land uses and noise sources identified. Pertinent distances should be noted.
- B. A description of the existing noise environment.
- C. The change in the noise environment for each project alternative.
- D. A discussion of the impacts for the alternatives.
- E. A discussion of the compatibility of the project with the applicable Noise Element of the General Plan or the most applicable noise laws or ordinances.
- F. A discussion of mitigation measures, clearly identifying the locations and number of people affected when mitigation is not feasible.
- G. Statements of: (1) where to obtain a copy of the Noise Study Report from which the information was taken (or the Noise Study Report may be included as an appendix, and (2) the name of the consultant who conducted the Noise Study if it was not conducted by the author of the Environmental Impact Report.



EAST BAY REGIONAL PARK DISTRICT

11500 SKYLINE BOULEVARD • OAKLAND, CALIFORNIA 94619 • TELEPHONE (415) 531-9300

BOARD OF DIRECTORS: HARLAN KESSEL, President; WALTER H. COSTA, Vice President; TED RADKE, Secretary; JOHN J. LEAVITT, Treasurer; HOWARD L. COGSWELL, DONALD G. HOLTGRIEVE, MARY LEE JEFFERDS • RICHARD C. TRUDEAU, General Manager

January 12, 1983



Mr. Norman Lind
Director of City Planning
City of Oakland
14th and Washington Streets
Oakland, CA 94612

Subject: NOP for the Caballo Hills EIR

Dear Mr. Lind:

The EBRPD has reviewed the subject document and has determined that it is both a Responsible Agency and an agency with jurisdiction-by-law. The District must make a discretionary decision about accepting the proposed dedication of the open space lands of this project.

Therefore, the District requests that the scope of the EIR include a discussion of the disposition of these open space lands, especially with respect to how this may have changed in view of the revised proposal for the development of the portions of the project near Keller Avenue. Of special concern in this regard are matters dealing with public access to the open space area via Keller Avenue and those aspects of the revised plan dealing with the provision of a trail corridor. The EBRPD has interacted with the project applicants during their preliminary planning process and has indicated these concerns to them. Plans for a trail in the open space areas include a loop trail completely encircling the ridge in the central portion of the Caballo Hills project. The District also will need to make findings that the land proposed for dedication as open space is a contiguous manageable unit which will facilitate coordinated management.

The District appreciates this opportunity to comment on the scope of the proposed EIR and looks forward to reviewing it when it is complete.

Very truly yours,

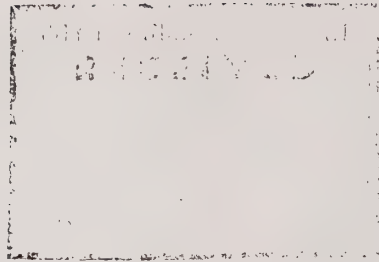
T. H. Lindenmeyer
Environmental Coordinator
Planning and Design

THL:lm

cc: R. C. Trudeau
L. Crutcher
H. Hornbeck
N. Havlik
R. Dawson



January 24, 1983



Mr. Willie Yee, Jr.
Associate Planner
City Planning Department
1421 Washington Street
Oakland, CA 94612

Subject: Notice of Preparation of a Supplement to the Caballo Hills EIR
ER 82-30

Dear Mr. Yee:

Thank you for the opportunity to review the subject Notice of Preparation. The District has the following specific comments regarding water service to the project site.

Water service to the planned development of the 34.6 acre site on Keller Road by W.S.I. Builders can be provided by a water main extension from the existing 12-inch main in Keller Road. Water service would be from the Piedmont Pressure Zone (Oak Knoll Area) which serves between elevations of 325-feet and 500-feet.

The District is developing water conservation guidelines that will be applicable to new construction. When the guidelines are implemented later this year, they will be imposed upon the proposed development. The development must be designed to include inside water-saving appliances and devices required by law. The EBMUD guidelines will cover the use of such equipment, devices, and methodology for irrigation that will provide long-term efficient water use, the use of soil amendments and low-water requirement plants, and limited use of turf. The electrical energy required to deliver water to the new development is directly related to water demand.

Please call Mr. Richard J. Rago, Supervisor of Distribution Planning, if you have any questions or if the District can be of further assistance. His telephone number is 891-0621 or 835-3000, extension 621.

Very truly yours,


RICHARD L. KOLM

RLK:AST:bde 1T12



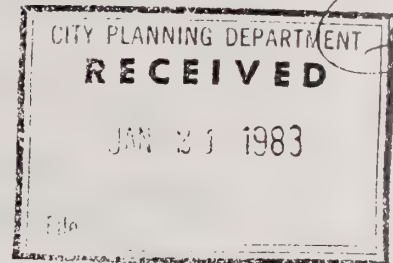
Willie
CITY OF OAKLAND



CITY HALL • 14TH AND WASHINGTON STREETS • OAKLAND, CALIFORNIA 94612

Planning Department

December 10, 1982



DEC 13 1982

Notice of Preparation

W.S. I. Builders proposes to construct a development consisting of 224 town-houses, 38,500 square feet of office and retail space, and 16 apartments on the 34.6 acre site located on Keller Avenue. This site is included within the approved Caballo Hills (Ridgemont) Subdivision, and was examined generally by the Environmental Impact Report (EIR) prepared and certified for the project in 1979. Section 15067-5 of the Guidelines for Implementation of the California Environmental Quality Act (CEQA) of 1970 allows the preparation of a supplement to an EIR if only minor additions or changes are necessary to make the previous EIR adequately apply to the project. The City of Oakland, as lead agency, will prepare a supplement to the Caballo Hills EIR for the development proposed by W.S.I. Builders.

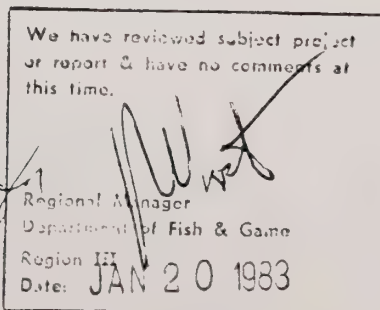
The City Planning Department has reviewed the proposed project and has determined that the Caballo Hills EIR adequately addresses impacts connected with public services, utilities, seismic hazards, air quality, climate vegetation, wildlife, archaeological and historic resources. No additional discussion of the above items will be required. The supplemental EIR will update the sections of the Caballo Hills EIR dealing with hydrology and acoustics. A new section examining the visual, traffic, and energy impacts, and possible mitigation measures, will be prepared.

If you would like to comment on the scope and content of the supplemental EIR, please do so in writing, as soon as possible, but not later than 45 days after receipt of this notice. Please refer to case ER 82-30 and send your comments to Willie Yee, Jr., Associate Planner, City Planning Department, 1421 Washington Street, Oakland, California, 94612. Please also provide the name of a contact person in your agency, organization or group.

Sincerely,

Norman J. Lind

NORMAN J. LIND
Director of City Planning



NJL:WY:cjr

Attachment



Association of Bay Area Governments

Hotel Claremont • Berkeley, California 94705 • (415) 841-9730

January 25, 1983

Mr. Willie Yee
Associate Planner
City Planning Department
1421 Washington Street
Oakland, CA 94612

RECEIVED

JAN 26 1983

CITY PLANNING COMMISSION
ZONING DIVISION

RE: Caballo Hills Subdivision Supplemental EIR

Dear Mr. Yee:

Thank you for the opportunity to comment on this Supplemental EIR. The following staff comments reflect long-standing concerns expressed by many locally-elected Bay Area officials. ABAG's Executive Board has not taken a position on this project.

ABAG's Regional Plan calls for job growth to be planned with consideration for affordable housing in proximity to job centers. Oakland's anticipated job growth over the next few years will require a substantial number of new housing units. The Caballo Hills Supplemental EIR indicates a density of fewer than 7 dwelling units per acre. ABAG staff suggest that if geologic conditions permit, consideration be given to increasing density on the remaining open sites available in Oakland.

If you have any questions regarding the comments, please contact Patricia Perry of our staff.

Sincerely,

Yvonne San Jule

Yvonne San Jule
Planning and Budget Coordinator

AIR RESOURCES BOARD

1102 Q STREET

P.O. BOX 2815

SACRAMENTO, CA 95812



January 25, 1983

RECEIVED

SCH No. 79052405

JAN 28 1983

CITY PLANNING COMMISSION
ZONING DIVISION

Mr. Willie Yee, Jr.
City of Oakland
1421 Washington Street
Oakland, CA 94612

Dear Mr. Yee:

Your December 10, 1982, notice of preparation for the Keller Avenue Property Draft Environmental Impact Report has been reviewed.

The Regional Programs Division of the Air Resources Board and local government decision makers need to be aware of the individual and cumulative impacts that projects might have on the attainment and maintenance of air quality standards in Alameda County and the Bay Area.

We note that the notice of preparation states that air quality impacts have been adequately addressed in the Caballo Hills' EIR but that traffic impacts will be addressed in the supplement. If traffic impacts differ from the previous EIR, emissions associated with motor vehicle traffic will also differ from previous assessments, and therefore should be reevaluated.

Enclosed is a recommended outline which will assist you in the preparation of the air quality analysis for the proposed project and will provide the information useful to our review.

For additional information, please contact Don Rake of my staff at (916) 322-6076.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Gary Agid'.

Gary Agid, Chief
Local Projects Support Branch
Regional Programs Division

Enclosure

cc: S. Freedman, BAAQMD
V. Petrites, MTC
A. Polvos, SCH

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Appendix B

Acoustics Report

RECEIVED

architecture
engineering
the environment

5 January 1983

Stephen Brothers
Reimer Associates
1633 Old Bayshore Highway
Burlingame, CA 94010

Subject: Keller Avenue Property--Acoustical Consulting

Dear Stephen:

At your request, I have evaluated the noise issues associated with the proposed Keller Avenue project. As you know, we studied this property in 1979 as part of the Caballo Hills EIR. At that time, it was envisioned that this area would be developed for single-family residences. We suggested that due to the relatively frequent use of outdoor areas in single multi-family developments the exterior noise level for homes located along Keller Avenue be controlled to a day/night average noise level (Ldn) of 55 dB. The Ldn is a measure of the average daily noise exposure of a given location. It is calculated by averaging the noise levels for each of the 24 hours, after the nighttime hours (10:00 pm to 7:00 am) have been penalized by 10 decibels to account for the increased sensitivity of people at night. It is now proposed that the property be developed for multi-family units.

Multi-family developments generally have less intensive outdoor use and are therefore somewhat less sensitive to noise than single-family developments. The City of Oakland has not adopted guidelines for the determination of the compatibility of various land uses with exterior noise levels but based on guidelines developed by others, including the California State Office of Noise Control, an exterior Ldn not in excess of 60 dB is considered acceptable for multi-family housing. Additionally, the State of California requires that new multi-family housing located in areas where the exterior Ldn exceeds 60 decibels must be developed in a manner such that interior noise levels due to

Charles M. Salter, PE
Eva Duesler
Thomas C. Hansen
Richard R. Illingworth, PE
Wilmoth Lewis
Anthony P. Nash, PE
Debra A. Papai
Richard B. Rodkin

Stephen Brothers
5 January 1983
Page Two

exterior noise sources do not exceed an Ldn of 45 dB. The professional offices, the mini market and the convenience shops would be considered compatible with an exterior Ldn not in excess of 70 dB.

Traffic projections for 1990 indicate that there will be approximately 25,000 vehicles per day passing the site on Keller Avenue. It is estimated that this volume of traffic would generate an Ldn of about 66 decibels outside of the nearest proposed unit, approximately 80 feet from the center of Keller Avenue. The noise level would decrease to an Ldn of 60 dB at a distance of approximately 250 feet from the center of Keller Avenue. Noise levels outside of the units in this area would exceed an Ldn of 60 dB. In addition, some treatment to the units would be required to achieve an Ldn of 45 decibels indoors. In general, a typical unit with windows open will reduce exterior noise levels by about 15 decibels. This means that if the exterior Ldn does not exceed 60, then the interior Ldn will not exceed 45 dB.

Reducing both exterior and interior noise levels for the units would be relatively straightforward. The proposed site plan for the project indicates that patio areas would be fenced. If these fences were 5 to 6 feet tall and were constructed in a manner such that they were airtight, noise levels for people sitting in the patios would not exceed an Ldn of 60 dB. Indoor noise levels could be controlled to an Ldn not in excess of 45 dB by providing mechanical ventilation for the units exposed to an exterior Ldn of greater than 60 dB. This would allow the windows to be closed at the discretion of the occupants. Some units might require low air infiltration rate frames to reduce noise intrusion. However, it is doubtful that laminated acoustical glass or double glazing would be required. In any case, the developer would be required to submit an acoustical report prior to the issuance of a building permit on this project indicating exactly what steps would be taken to meet the indoor requirement for an Ldn of 45 dB.

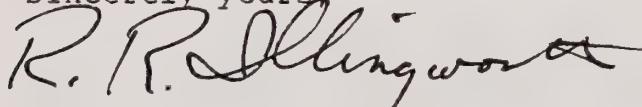
There are two other noise issues associated with this project. One is the potential increase in traffic noise along streets serving the project. The other issue is construction noise. An analysis of the potential traffic increases on Keller Avenue and Campus Drive indicates that the change in noise levels due to project generated by the Keller Avenue property would be insignificant (i.e., less than one decibel). Construction of the development will temporarily elevate noise levels in the area; that is, on the grounds of the Oak Knoll Naval Hospital and in the single-family residential development to the west of the site.

Stephen Brothers
5 January 1983
Page Three

The greatest amount of noise would be generated during grading of the site and during framing. Noise levels generated would not be excessive and while potentially annoying, would not cause a significant disturbance in the adjacent community. However, to minimize construction noise impacts, construction should be restricted to the hours of 8:00 am to 5:00 pm on weekdays. All equipment used in the construction of the project should be adequately muffled and maintained.

This concludes my assessment of the Keller Avenue property. If you have any questions or if I can be of further service, please do not hesitate to call.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "R. R. Illingworth", with a stylized flourish at the end.

Richard R. Illingworth, PE

RRI/esd
83-004

charles m. salter associates, inc.

consultants
in
acoustics

architecture
engineering
the environment

19 January 1983

Stephen Brothers
Reimer Associates
1633 Old Bayshore Highway
Burlingame, CA 94010

Subject: Keller Avenue Property--Acoustical Consulting

Dear Stephen:

I have reviewed the comments on the Notice of Preparation for the Keller Avenue EIR prepared by the Department of Health Services. Regarding noise, the department was particularly concerned about the potential increase in truck traffic likely to be needed to service the office and retail portion of the project. In response, I offer the following.

Lou Larsen, who prepared the traffic estimates for the Keller Avenue EIR, has indicated that the small amount of square footage related with the office and retail portion of the project would generate an insignificant number of truck trips. The majority of the trips that would be generated would be medium-size, gasoline-powered trucks. Few, if any, diesel trucks would make deliveries on a routine basis to either the office or retail portion of the project. The resulting increase in traffic noise levels along Keller Avenue, as discussed in our letter to you dated 5 January 1983, would generally not be perceptible to persons residing along Keller Avenue.

This concludes my response to the comments on the Notice of Preparation. If you need further clarification or if I can be of further help, please do not hesitate to call.

Sincerely yours,



Richard R. Illingworth, PE

RRI/esd
83-004

Charles M. Salter, PE
Eva Duesler
Richard R. Illingworth, PE
Wilmoth Lewis
Anthony P. Nash, PE
Sheldon Remington
Richard B. Rodkin

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Appendix C

Transportation Information

FORM PED-5

PEDESTRIAN AND SCHOOL

CROSSING MANUAL

City of OAKLAND

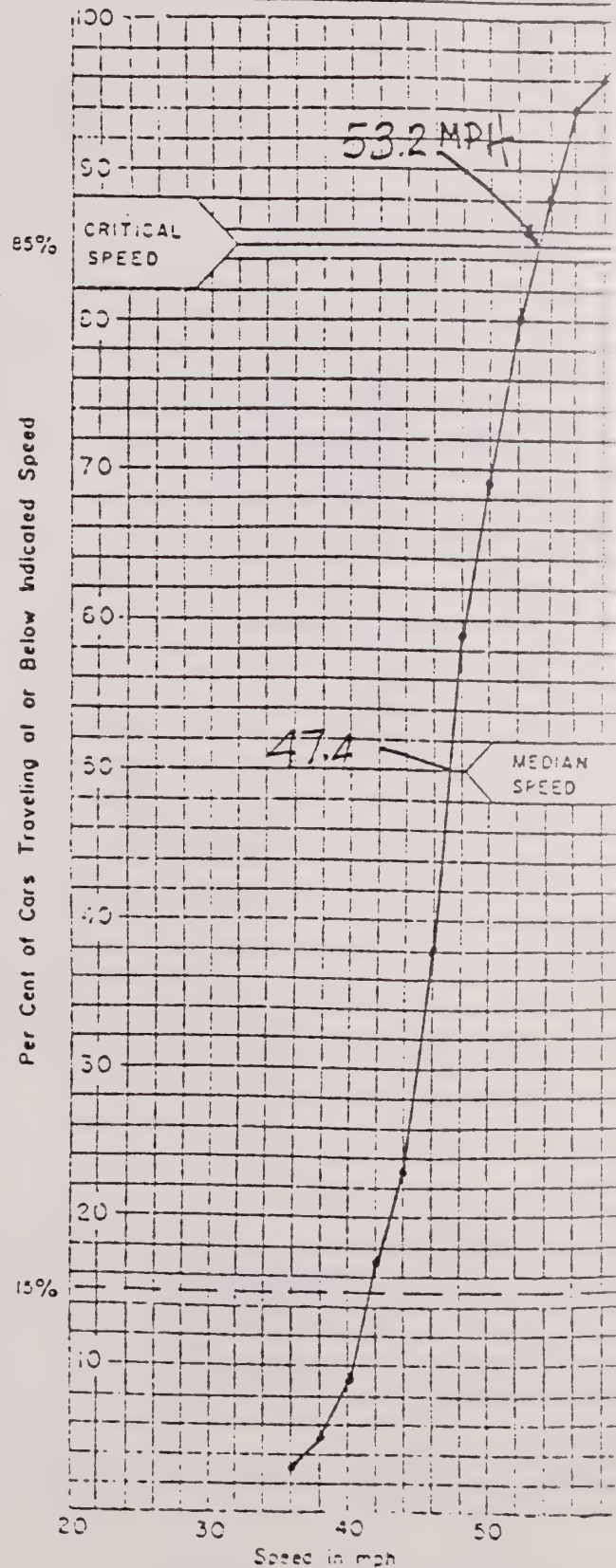
SPOT SPEED SUMMARY

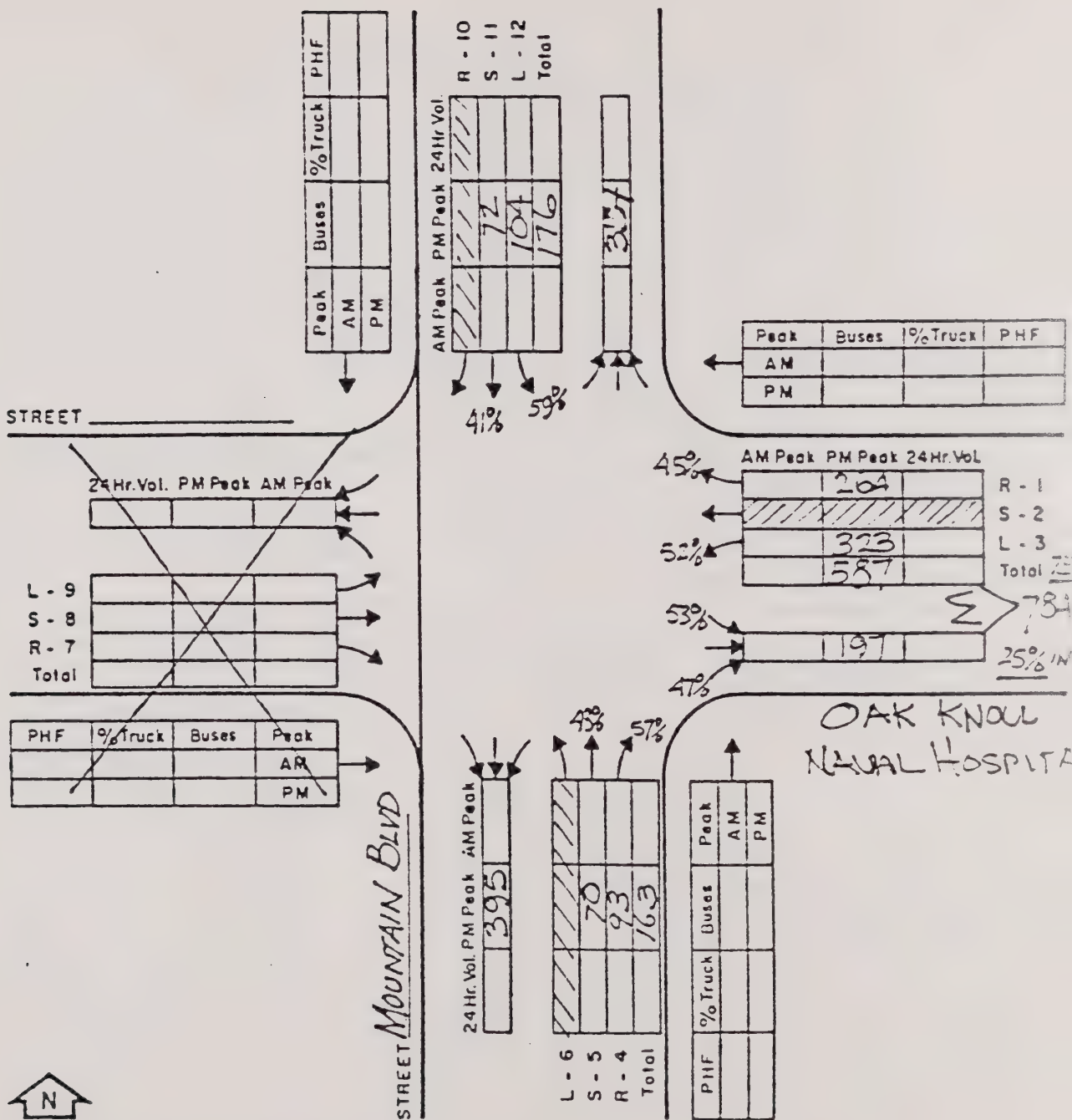
MADE BY LED DATE 1/26

CHECKED BY _____ DATE _____

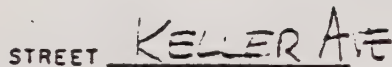
LOCATION KELLER AVENUE AT OAKLANDDIRECTION OF TRAVEL 2-WAYDATE 1/26/83 DAY OF WEEK TUESDAYPERIOD OF STUDY 5:50 PM TO 6:15 PMSPEED LIMIT 35 MPH WEATHER CLOUDY

SPEED GROUP		Tally	Freq. (f_i)	Cum. %	$f_i x_i$	$f_i (x_i)^2$
Speed Range	$\sum x_i$					
17-(18)	18					
19-(20)	20					
21-(22)	22					
23-(24)	24					
25-(26)	26					
27-(28)	28					
29-(30)	30					
31-(32)	32					
33-(34)	34					
35-(36)	35	///	3	3	108	
37-(38)	37	///	2	5	76	
39-(40)	40	///	5	9	200	
41-(42)	42	/// ///	8	17	336	
43-(44)	44	/// ///	7	23	308	
45-(46)	46	/// /// ///	16	38	736	
47-(48)	48	/// /// ///	23	59	1104	
49-(50)	50	/// ///	11	69	550	
51-(52)	52	/// ///	11	80	572	
53-(54)	54	/// ///	9	88	486	
55-(56)	56	/// ///	7	94	392	
57-(58)	58	///	2	96	116	
59-(60)	60	///	2	98	120	
67-68	68	///	2	100	136	
Totals			108		5240	
			n		$\sum f_i x_i$	$\sum f_i (x_i)^2$

AVG. SPEED $\bar{x} = \frac{\sum f_i x_i}{n} = 48.5$ MPH10 MPH PACE 44 MPH TO 54 MPH% IN PACE 65%% OVER PACE 12% % UNDER PACE 23%



MOUNTAIN BLVD @ OAK KNOLL
 INTERSECTION
OAKLAND, CALIFORNIA
 CITY
TUESDAY JANUARY 25
 DAY DATE OF COUNT
 : : AM 4:00-5:4
 TIME OF COUNT
 PEAK : : AM
 HOUR 4:00-5:00 PM



	206	
--	-----	--

L - 9	2
S - 8	270
R - 7	3
Total	275

PHF	% Truck	Buses	Peak
			AM
			PM

Peak	Buses	% Truck	PHF
AM			
PM			

	3	
	5	

	287
--	-----

	Contr. Vol. PM Peak		AM Peak	
L - 6	(10)	6		
S - 5	(123)	103		
R - 4	(14)	17		
Total	(137)	120		

PIIF	% Truck	Buses	Peak
			AM
			PM

3(7) 3(3) 431(32)
72(31)
OAK KNOLL LANE

PEAK HOUR FOR
KNOLL DRIVEWAY ONLY
1:00 PM - 5:00 PM

IN	6	5%
OUT	120	95%
	<u>126</u>	

$$\begin{array}{r} \text{IN (10)} \quad 7\% \\ \text{OUT (137)} \quad 93\% \\ \hline (147) \end{array}$$

KELLER AVE / OAKLAND
INTERSECTION
OAKLAND

CITY TUESDAY FEB 1 198
DAY DATE OF COUNT

: - : AM 4:30-5:00
TIME OF COUNT

PEAK : - : AM
HOUR 4:00 - 5:00 PM

NOTE :

CHICKNOLL DRIVEWAY OPEN ONLY

7:00AM - 9:00AM

4:00 PM - 6:00 PM

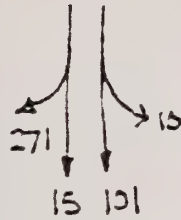
GATE IS LOCKED AT OTHER TIMES

Lane Usage

STREET MOUNTAIN BLVD

Peak	Buses	% Truck	PHF
AM			
PM			

AM Peak	PM Peak	24 Hr. Vol.
271		
101		
10		
382		



Peak	Buses	% Truck	PHF
AM			
PM			

24 Hr. Vol.	PM Peak	AM Peak
		651

	24 Hr. Vol.	PM Peak	AM Peak
L - 9			11
S - 8			26
R - 7			23
Total			60

PHF	% Truck	Buses	Peak
			AM
			PM

STREET KELLER AVE

24 Hr. Vol.	PM Peak	AM Peak
		170

	24 Hr. Vol.	PM Peak	AM Peak
L - 6			91
S - 5			103
R - 4			146
Total			340

PHF	% Truck	Buses	Peak
			AM
			PM

AM Peak	PM Peak	24 Hr. Vol.	
25			R - 1
239			S - 2
45			L - 3
360			Total

24 Hr. Vol.	PM Peak	AM Peak
		232

KELLER Avenue @ MOUNTAIN

INTERSECTION OAKLAND

CITY FRIDAY

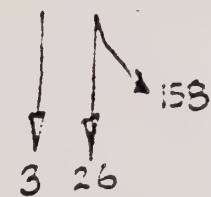
DATE 1/29/83

TIME 7:15 - 8:00 AM

TIME OF COUNT

PEAK 7:30 - 8:30 AM
HOUR : - : PM

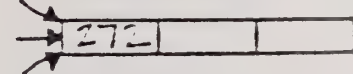
Lane Usage



Peak	Buses	% Truck	PHF
AM			
PM			

AM Peak	PM Peak	24 Hr. Vol.	
			R - 1
			S - 2
			L - 3
			Total

ONE WAY



STREET 580 OFF RAMP

Peak	Buses	% Truck	PHF
AM			
PM			

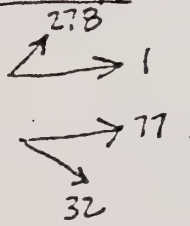
AM Peak	PM Peak	24 Hr. Vol.	
			R - 10
			S - 11
			L - 12
			Total

ONE WAY

24 Hr. Vol.	PM Peak	AM Peak

PHF	% Truck	Buses	Peak
			AM
			PM

Lane Usage



KELLER AVE

24 Hr. Vol.	PM Peak	AM Peak

Peak	Buses	% Truck	PHF
AM			
PM			

KELLER AVE & 580 OFF RAMP

INTERSECTION
OAKLAND

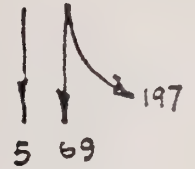
CITY FRIDAY

DATE OF COUNT 1/28/83

TIME OF COUNT 7:15 - 8:00 AM

PEAK 7:30 - 8:30 AM
HOUR : - : PM

LANE USAGE



STREET 580 OFF RAMP

Peak	Buses	% Truck	PHF
AM			
PM			

AM Peak	PM Peak	24 Hr. Vol.

74	197	271	352
----	-----	-----	-----

Peak	Buses	% Truck	PHF
AM			
PM			

OFF RAMP
ONE WAY

24 Hr. Vol. PM Peak AM Peak

L - 9	287	
S - 8	115	
R - 7	85	
Total	487	

PHF	% Truck	Buses	Peak
			AM
			PM

STREET KELLER AVE

159

65	53	118
----	----	-----

L - 6
S - 5
R - 4
Total

Peak	Buses	% Truck	PHF
AM			
PM			

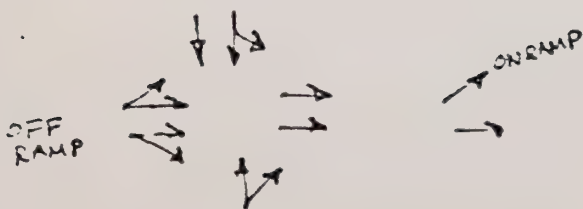
AM Peak PM Peak 24 Hr. Vol

R - 1
S - 2
L - 3
Total

ONE WAY

365

Lanes



KELLER

KELLER AVE AT 580
INTERSECTION
OAKLAND

CITY 1/27/83 THURSDAY
DATE OF COUNT

TIME OF COUNT 4:00 - 5:45

PEAK : - : AM
HOUR 4:30 - 5:30 PM

STREET KELLER AVE

Peak	Buses	% Truck	PHF
AM			
PM			

AM Peak	PM Peak	24Hr Vol.

R - 10	S - 11	L - 12	Total

24Hr. Vol.	PM Peak	AM Peak

L - 9	S - 8	R - 7	Total

PHF	% Truck	Buses	Peak
			AM
			PM

STREET MOUNTAIN BLVD

AM Peak	PM Peak	24Hr. Vol.

R - 1	S - 2	L - 3	Total

24Hr. Vol.	PM Peak	AM Peak

L - 6	S - 5	R - 4	Total

PHF	% Truck	Buses	Peak
			AM
			PM

KELLER AVE & MOUNTAIN BLVD
 INTERSECTION
OAKLAND CALIF
 CITY
Monday 1-3-83
 DAY DATE OF COUNT
 : - : AM 4:00-6:0
 TIME OF COUNT

SOURCE

LOU SHARON

PEAK : - : AM
 HOUR 4:00 - 5:00 PM

Figure 9-1A

TRAFFIC SIGNAL WARRANTS

CALC _____ DATE _____
CHK _____ DATE _____

DIST _____ CO _____ RTE _____ PM _____

Major St: KELLER AVENUE Critical Approach Speed _____ mph
Minor St: MOUNTAIN BLVD Critical Approach Speed _____ mph

Critical speed of major street traffic 40 mph _____ ☒
In built up area of isolated community of < 10,000 pop. _____ ☐ RURAL (R)
☐ URBAN (U)

WARRANT 1 - Minimum Vehicular Volume

MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)					100% SATISFIED		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
					80% SATISFIED		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
		U	R		U	R			
APPROACH LANES	1		2 or more		/	/	/	/ 4-5/5-6/	/
Both Approchs.	500	350	600	420					
Major Street	(400)	(280)	(480)	(336)				552 612	
Highest Approach	150	105	200	140					
Minor Street *	(120)	(84)	(160)	(112)				662 537	

* NOTE: Heavier of left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 2 - Interruption of Continuous Traffic

MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)					100% SATISFIED		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		80% SATISFIED		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
		U	R	U	R								
APPROACH LANES	1		2 or more										
Both Approchs.	750	525	900	630									
Major Street	(600)	(420)	(720)	(504)					552	612			
Highest Approach	75	53	100	70									
Minor Street *	(60)	(42)	(80)	(56)					662	537			

* NOTE: Heavier of left turn movement from Major Street included when LT-phasing is proposed ☐

WARRANT 3 - Minimum Pedestrian Volume

MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)					100% SATISFIED		Yes <input type="checkbox"/> No <input type="checkbox"/>		80% SATISFIED		Yes <input type="checkbox"/> No <input type="checkbox"/>	
			U	R								
Both Approchs.												
Major Street		No Median	600	420								
Volume		Raised 4' Median	1000	700								
			(800)	(560)								
Ped's On Highest Volume			150	105								
X-Walk Xing Major Street			(120)	(84)								

IF MIDBLOCK SIGNAL PROPOSED ☐

MIN. REQUIREMENT	DISTANCE TO NEAREST ESTABLISHED CORNER	FULFILLED
150 Feet	N/E _____ ft S/W _____ ft	Yes <input type="checkbox"/> No <input type="checkbox"/>

WARRANT 4 - School Crossings

Not Applicable ☐

See School Crossings Warrant Sheet ☐

TABULAR SUMMARY OF VEHICLE COUNTS

Observer LHL Date 1-3-83 Day MONDAY City OAKLAND

A = Right turn

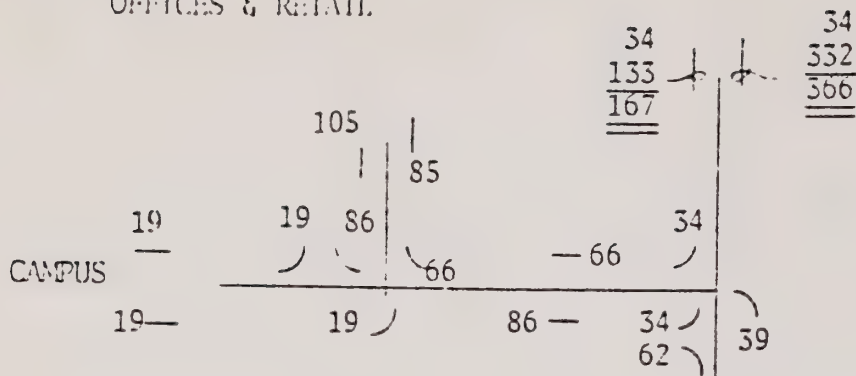
S = Straight

$L = \text{Loll turn}$

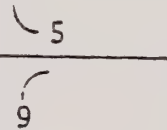
INTERSECTION OF KELLER AVENUE AND MOUNTAIN BLVD

[illegible]

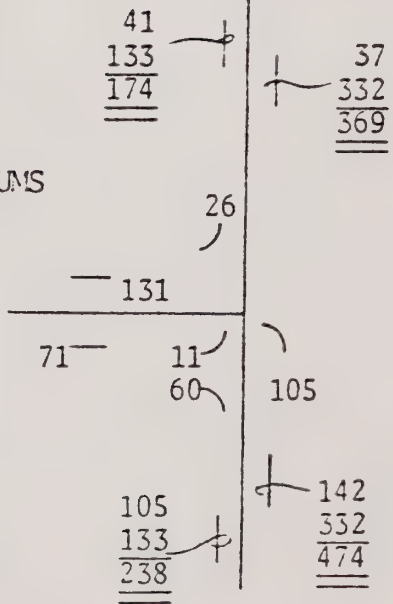
OFFICES & RETAIL



APARTMENTS



CONDOMINIUMS

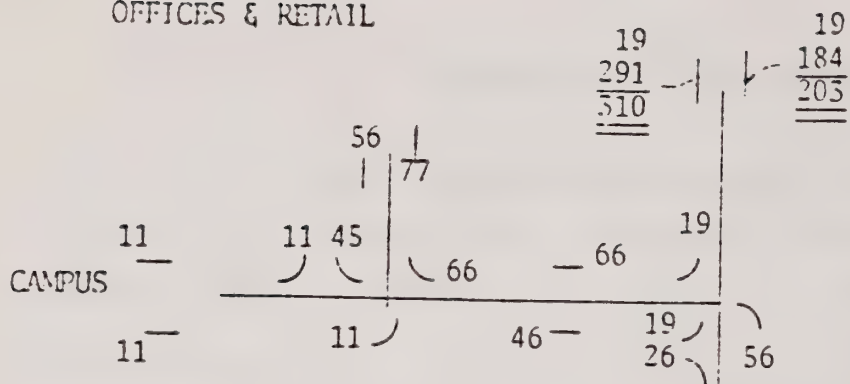


LEGEND
000= project
000= existing
000= TOTAL

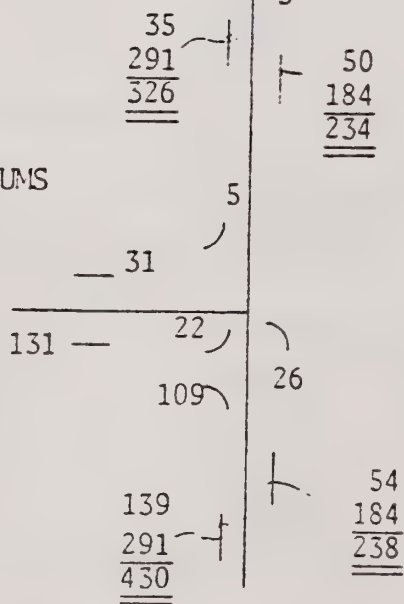
KELLER

PM PEAK HOUR
 TRAFFIC
 DISTRIBUTION

OFFICES & RETAIL



CONDOMINIUMS



KELLER

LEGEND
 000= project
 000= existing
 000= TOTAL

AM PEAK HOUR
 TRAFFIC
 DISTRIBUTION

Figure 9-1C

EXIST + PROJECT

TRAFFIC SIGNAL WARRANTS

(Based on Estimated Average Daily Traffic - See Note 2)

KELLER AT FONTAINE
586 OFF RAMP

URBAN <u>X</u> RURAL _____		Minimum Requirements EADT			
1. Minimum Vehicular Satisfied _____ Not Satisfied <u>X</u>		KELLER Vehicles per day on major street (total of both approaches) <u>3600</u>		OFF RAMP Vehicles per day on higher-volume minor-street approach (one direction only) <u>4600</u>	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	8,000	5,600	2,400	1,680
2 or more	1	9,600	6,720	2,400	1,680
2 or more	<u>2 or more</u>	9,600	6,720	<u>3,200</u>	2,240
<u>1.</u>	2 or more	<u>8,000</u>	5,600	<u>3,200</u>	2,240
2. Interruption of Continuous Traffic Satisfied _____ Not Satisfied <u>X</u>		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	12,000	8,400	1,200	850
2 or more	1	14,400	10,080	1,200	850
2 or more	2 or more	14,400	10,080	<u>1,600</u>	1,120
<u>1.</u>	<u>2 or more</u>	<u>12,000</u>	8,400	<u>1,600</u>	1,120
3. Combination Satisfied _____ Not Satisfied <u>X</u>		2 Warrants		2 Warrants	
No one warrant satisfied but following warrants fulfilled 80% or more.....					
<u>ND</u> <u>ND</u> <u>1</u> <u>2</u>					

NOTE:

- Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
- To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

$$\begin{array}{r} 389 \\ 37 \\ \hline 426 \end{array} \div 12$$

$$\begin{array}{r} 487 \\ 67 \\ \hline 554 \end{array} \div 12$$

TRAFFIC SIGNAL WARRANTS

1990
(50% Oak Knolls USE Kella)

(Based on Estimated Average Daily Traffic - See Note 2)

KELLER AT FONTAINE
2 OFF RAMP

NOTE:

- TS-10-C

$$\begin{array}{r} 177 \\ 451 \\ \hline 628 \end{array} \div 12$$

817-12

1990
(50% Oak know - Use Keller)

ASSUME
580 off ramp is T
major street & KELLER
is Minor (Based on E

(Based on Estimated Average Daily Traffic - See Note 2)

5) Keller at Fontaine &
S80 DIFF RAMP

URBAN <input checked="" type="checkbox"/> RURAL <input type="checkbox"/>		Minimum Requirements EADT																															
1. Minimum Vehicular Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>		OFF RAMP Vehicles per day on major street (total of both approaches) <u>6800</u>		KELLER Vehicles per day on higher-volume minor-street approach (one direction only) <u>5200</u>																													
Number of lanes for moving traffic on each approach <table border="0"> <tr> <th>Major Street</th> <th>Minor Street</th> </tr> <tr> <td>1</td> <td>1</td> </tr> <tr> <td><u>2 or more</u></td> <td><u>1</u></td> </tr> <tr> <td>2 or more</td> <td>2 or more</td> </tr> <tr> <td>1</td> <td>2 or more</td> </tr> </table>		Major Street	Minor Street	1	1	<u>2 or more</u>	<u>1</u>	2 or more	2 or more	1	2 or more	<table border="0"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>8,000</td> <td>5,600</td> </tr> <tr> <td><u>9,600</u></td> <td>6,720</td> </tr> <tr> <td>9,600</td> <td>6,720</td> </tr> <tr> <td>8,000</td> <td>5,600</td> </tr> </table>	Urban	Rural	8,000	5,600	<u>9,600</u>	6,720	9,600	6,720	8,000	5,600	<table border="0"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>2,400</td> <td>1,680</td> </tr> <tr> <td><u>2,400</u></td> <td>1,680</td> </tr> <tr> <td>3,200</td> <td>2,240</td> </tr> <tr> <td>3,200</td> <td>2,240</td> </tr> </table>	Urban	Rural	2,400	1,680	<u>2,400</u>	1,680	3,200	2,240	3,200	2,240
Major Street	Minor Street																																
1	1																																
<u>2 or more</u>	<u>1</u>																																
2 or more	2 or more																																
1	2 or more																																
Urban	Rural																																
8,000	5,600																																
<u>9,600</u>	6,720																																
9,600	6,720																																
8,000	5,600																																
Urban	Rural																																
2,400	1,680																																
<u>2,400</u>	1,680																																
3,200	2,240																																
3,200	2,240																																
2. Interruption of Continuous Traffic Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)																													
Number of lanes for moving traffic on each approach <table border="0"> <tr> <th>Major Street</th> <th>Minor Street</th> </tr> <tr> <td>1</td> <td>1</td> </tr> <tr> <td><u>2 or more</u></td> <td><u>1</u></td> </tr> <tr> <td>2 or more</td> <td>2 or more</td> </tr> <tr> <td>1</td> <td>2 or more</td> </tr> </table>		Major Street	Minor Street	1	1	<u>2 or more</u>	<u>1</u>	2 or more	2 or more	1	2 or more	<table border="0"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>12,000</td> <td>8,400</td> </tr> <tr> <td><u>14,400</u></td> <td>10,080</td> </tr> <tr> <td>14,400</td> <td>10,080</td> </tr> <tr> <td>12,000</td> <td>8,400</td> </tr> </table>	Urban	Rural	12,000	8,400	<u>14,400</u>	10,080	14,400	10,080	12,000	8,400	<table border="0"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>1,200</td> <td>850</td> </tr> <tr> <td><u>1,200</u></td> <td>850</td> </tr> <tr> <td>1,600</td> <td>1,120</td> </tr> <tr> <td>1,600</td> <td>1,120</td> </tr> </table>	Urban	Rural	1,200	850	<u>1,200</u>	850	1,600	1,120	1,600	1,120
Major Street	Minor Street																																
1	1																																
<u>2 or more</u>	<u>1</u>																																
2 or more	2 or more																																
1	2 or more																																
Urban	Rural																																
12,000	8,400																																
<u>14,400</u>	10,080																																
14,400	10,080																																
12,000	8,400																																
Urban	Rural																																
1,200	850																																
<u>1,200</u>	850																																
1,600	1,120																																
1,600	1,120																																
3. Combination Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>		2 Warrants		2 Warrants																													
No one warrant satisfied but following warrants fulfilled 80% or more..... <table border="0"> <tr> <td><u>NO</u></td> <td><u>NO</u></td> </tr> <tr> <td>1</td> <td>2</td> </tr> </table>		<u>NO</u>	<u>NO</u>	1	2																												
<u>NO</u>	<u>NO</u>																																
1	2																																

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

(Based on Estimated Average Daily Traffic - See Note 2)

EXISTING

KELLER AT MOUNTAIN

URBAN <input checked="" type="checkbox"/> RURAL <input type="checkbox"/>		Minimum Requirements EADT			
1. Minimum Vehicular Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>		KELLER Vehicles per day on major street (total of both approaches) 6400		MOUNTAIN Vehicles per day on higher-volume minor-street approach (one direction only) 3900 (65%)	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	8,000	5,600	2,400	1,680
2 or more	1	9,600	6,720	2,400	1,680
<u>2 or more</u>	<u>2 or more</u>	<u>9,600</u>	6,720	<u>3,200</u>	2,240
1	2 or more	8,000	5,600	3,200	2,240
2. Interruption of Continuous Traffic Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>		Vehicles per day on major street (total of both approaches) 6400		Vehicles per day on higher-volume minor-street approach (one direction only) 3900	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	12,000	8,400	1,200	850
2 or more	1	14,400	10,080	1,200	850
<u>2 or more</u>	<u>2 or more</u>	<u>14,400</u>	10,080	<u>1,600</u>	1,120
1	2 or more	12,000	8,400	1,600	1,120
3. Combination Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>		2 Warrants		2 Warrants	
No one warrant satisfied but following warrants fulfilled 80% or more.....					
_____ NO _____ NO 1 2					

NOTE:

- Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
- To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

EXIST + PROJECT

KELLER AT MOUNTAIN

(Based on Estimated Average Daily Traffic - See Note 2)

URBAN <input checked="" type="checkbox"/> RURAL <input type="checkbox"/>		Minimum Requirements EADT			
1. Minimum Vehicular Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)	
Number of lanes for moving traffic on each approach		7900		4200	
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	8,000	5,600	2,400	1,680
2 or more	1	9,600	6,720	2,400	1,680
<u>2 or more</u>	<u>2 or more</u>	<u>9,600</u>	6,720	<u>3,200</u>	2,240
1	2 or more	8,000	5,600	3,200	2,240
2. Interruption of Continuous Traffic		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)	
Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>		7900		4200	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	12,000	8,400	1,200	850
2 or more	1	14,400	10,080	1,200	850
<u>2 or more</u>	<u>2 or more</u>	<u>14,400</u>	10,080	<u>1,600</u>	1,120
1	2 or more	12,000	8,400	1,600	1,120
3. Combination		2 Warrants		2 Warrants	
Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>					
No one warrant satisfied but following warrants fulfilled 80% or more.....					
yes 1 No 2					

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

$$\begin{array}{r} 772 \\ 179 \\ \hline 951 \end{array} = 125$$
$$\begin{array}{r} 556 \\ 44 \\ \hline 600 \end{array} \times 0.65 = 0.39$$

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

1990.
(OAK KNOLL ACCESS STATUS)

(Based on Estimated Average Daily Traffic - See Note 2)

KELLER AT MOUNTA

URBAN <input checked="" type="checkbox"/> RURAL <input type="checkbox"/>		Minimum Requirements EADT																															
1. Minimum Vehicular Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>		KELLER Vehicles per day on major street (total of both approaches) <u>9500</u>		MOUNTAIN Vehicles per day on higher-volume minor-street approach (one direction only) <u>5500</u>																													
Number of lanes for moving traffic on each approach <table border="0"> <tr> <th>Major Street</th> <th>Minor Street</th> </tr> <tr> <td>1</td> <td>1</td> </tr> <tr> <td>2 or more</td> <td>1</td> </tr> <tr> <td><u>2 or more</u></td> <td><u>2 or more</u></td> </tr> <tr> <td>1</td> <td>2 or more</td> </tr> </table>		Major Street	Minor Street	1	1	2 or more	1	<u>2 or more</u>	<u>2 or more</u>	1	2 or more	<table border="0"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>8,000</td> <td>5,600</td> </tr> <tr> <td>9,600</td> <td>6,720</td> </tr> <tr> <td><u>9,600</u></td> <td>6,720</td> </tr> <tr> <td>8,000</td> <td>5,600</td> </tr> </table>	Urban	Rural	8,000	5,600	9,600	6,720	<u>9,600</u>	6,720	8,000	5,600	<table border="0"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>2,400</td> <td>1,680</td> </tr> <tr> <td>2,400</td> <td>1,680</td> </tr> <tr> <td><u>3,200</u></td> <td>2,240</td> </tr> <tr> <td>3,200</td> <td>2,240</td> </tr> </table>	Urban	Rural	2,400	1,680	2,400	1,680	<u>3,200</u>	2,240	3,200	2,240
Major Street	Minor Street																																
1	1																																
2 or more	1																																
<u>2 or more</u>	<u>2 or more</u>																																
1	2 or more																																
Urban	Rural																																
8,000	5,600																																
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Major Street	Minor Street																																
1	1																																
2 or more	1																																
<u>2 or more</u>	<u>2 or more</u>																																
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Urban	Rural																																
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Urban	Rural																																
1,200	850																																
1,200	850																																
<u>1,600</u>	1,120																																
1,600	1,120																																
3. Combination Satisfied _____ Not Satisfied <input checked="" type="checkbox"/>		2 Warrants		2 Warrants																													
No one warrant satisfied but following warrants fulfilled 80% or more..... <table border="0"> <tr> <td><u>YES</u></td> <td><u>NO</u></td> </tr> <tr> <td>1</td> <td>2</td> </tr> </table>		<u>YES</u>	<u>NO</u>	1	2																												
<u>YES</u>	<u>NO</u>																																
1	2																																

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

PM Peak @ 12°
 $1135 \div 12 = 9500$

$$783 \times 0.65 \div 0.92$$
$$= 5500$$

TRAFFIC SIGNAL WARRANTS

(Based on Estimated Average Daily Traffic - See Note 2)

1990
(50% Oak Knoll uses Keller)

KELLER AT MOUNTAIN

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

EXIST + PROJECT

(Based on Estimated Average Daily Traffic - See Note 2)

KELLER AT SITE

URBAN _____ RURAL <u>X</u>		Minimum Requirements EADT			
1. Minimum Vehicular Satisfied _____ Not Satisfied <u>X</u>		Vehicles per day on major street (total of both approaches) <u>5600</u>		PROJECT Vehicles per day on higher-volume minor-street approach (one direction only) <u>1000</u>	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	8,000	5,600	2,400	1,680
2 or more	1	9,600	6,720	2,400	1,680
<u>2 or more</u>	<u>2 or more</u>	9,600	<u>6,720</u>	3,200	<u>2,240</u>
1	2 or more	8,000	5,600	3,200	2,240
2. Interruption of Continuous Traffic Satisfied _____ Not Satisfied <u>X</u>		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	12,000	8,400	1,200	850
2 or more	1	14,400	10,080	1,200	850
<u>2 or more</u>	<u>2 or more</u>	14,400	<u>10,080</u>	1,600	<u>1,120</u>
1	2 or more	12,000	8,400	1,600	1,120
3. Combination Satisfied _____ Not Satisfied <u>X</u>		2 Warrants		2 Warrants	
No one warrant satisfied but following warrants fulfilled 80% or more.....					
<u>NO</u> 1		<u>NO</u> 2			

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

$$\begin{array}{r} 465 \\ 209 \\ \hline 674 \div 12\% \end{array}$$

$\frac{1}{2} \Delta OT$

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

(Based on Estimated Average Daily Traffic - See Note 2)

EXIST + PROJECT + CABALLO H.

KELLER AT SITE

URBAN RURAL <u>X</u>		Minimum Requirements EADT			
1. Minimum Vehicular Satisfied Not Satisfied <u>X</u>		KELLER Vehicles per day on major street (total of both approaches) <u>7300</u>		PROJECT Vehicles per day on higher- volume minor-street approach (one direction only) <u>1000</u>	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	8,000	5,600	2,400	1,680
2 or more	1	9,600	6,720	2,400	1,680
<u>2 or more</u>	<u>2 or more</u>	9,600	<u>6,720</u>	3,200	<u>2,240</u>
1	2 or more	8,000	5,600	3,200	2,240
2. Interruption of Continuous Traffic Satisfied Not Satisfied <u>X</u>		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher- volume minor-street approach (one direction only)	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	12,000	8,400	1,200	850
2 or more	1	14,400	10,080	1,200	850
<u>2 or more</u>	<u>2 or more</u>	14,400	<u>10,080</u>	1,600	<u>1,120</u>
1	2 or more	12,000	8,400	1,600	1,120
3. Combination Satisfied Not Satisfied <u>X</u>		2 Warrants		2 Warrants	
No one warrant satisfied but following warrants fulfilled 80% or more..... <u>YES</u> <u>NO</u> 1 2					

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

EXIST + PROJECT
+ Caballo Hills + 50% Oak
Knoll

(Based on Estimated Average Daily Traffic - See Note 2)

KELLER AT SITE

URBAN _____ RURAL <u>X</u>		Minimum Requirements EADT			
1. Minimum Vehicular Satisfied _____ Not Satisfied <u>X</u>		<u>KELLER</u> Vehicles per day on major street (total of both approaches) <u>8300</u>		<u>OAK KNOLLS</u> Vehicles per day on higher- volume minor-street approach (one direction only) <u>2000</u>	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	8,000	5,600	2,400	1,680
2 or more	1	9,600	6,720	2,400	1,680
<u>2 or more</u>	<u>2 or more</u>	9,600	<u>6,720</u>	3,200	<u>2,240</u>
1	2 or more	8,000	5,600	3,200	2,240
2. Interruption of Continuous Traffic Satisfied _____ Not Satisfied <u>X</u>		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher- volume minor-street approach (one direction only)	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	12,000	8,400	1,200	850
2 or more	1	14,400	10,080	1,200	850
<u>2 or more</u>	<u>2 or more</u>	14,400	<u>10,080</u>	1,600	<u>1,120</u>
1	2 or more	12,000	8,400	1,600	1,120
3. Combination Satisfied <u>X</u> Not Satisfied _____		2 Warrants		2 Warrants	
No one warrant satisfied but following warrants fulfilled 80% or more..... <u>yes</u> <u>yes</u> <u>1</u> <u>2</u>					

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

(Based on Estimated Average Daily Traffic - See Note 2)

1900
[OAK KNOLL STATUS QUO
KELLER AT SITE

URBAN _____ RURAL <u>X</u>		Minimum Requirements EADT			
1. Minimum Vehicular Satisfied _____ Not Satisfied <u>X</u>		<u>KELLER</u> Vehicles per day on major street (total of both approaches) <u>9300</u>		<u>PADJECT</u> Vehicles per day on higher-volume minor-street approach (one direction only) <u>1000</u>	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	8,000	5,600	2,400	1,680
2 or more	1	9,600	6,720	2,400	1,680
<u>2 or more</u>	<u>2 or more</u>	9,600	<u>6,720</u>	3,200	<u>2,240</u>
1	2 or more	8,000	5,600	3,200	2,240
2. Interruption of Continuous Traffic Satisfied _____ Not Satisfied <u>X</u>		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)	
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	12,000	8,400	1,200	850
2 or more	1	14,400	10,080	1,200	850
<u>2 or more</u>	<u>2 or more</u>	14,400	<u>10,080</u>	1,600	<u>1,120</u>
1	2 or more	12,000	8,400	1,600	1,120
3. Combination Satisfied <u>X</u> Not Satisfied _____ No one warrant satisfied but following warrants fulfilled 80% or more..... <u>yes</u> <u>yes</u> <u>1</u> <u>2</u>		2 Warrants		2 Warrants	

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

TRAFFIC SIGNAL WARRANTS

(Based on Estimated Average Daily Traffic - See Note 2)

1990

150% Oak Knoll uses Keller

Keller at Site

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

(Based on Estimated Average Daily Traffic - See Note 2)

EXIST + KELLER

KELLER AT CAMPUS

URBAN _____ RURAL <u>X</u>		Minimum Requirements EADT																															
1. Minimum Vehicular Satisfied _____ Not Satisfied <u>X</u>		KELLER Vehicles per day on major street (total of both approaches) <u>4600</u>		CAMPUS Vehicles per day on higher-volume minor-street approach (one direction only) <u>750</u>																													
Number of lanes for moving traffic on each approach <table border="0"> <tr> <th>Major Street</th> <th>Minor Street</th> </tr> <tr> <td>1</td> <td>1</td> </tr> <tr> <td>2 or more</td> <td>1</td> </tr> <tr> <td><u>2 or more</u></td> <td><u>2 or more</u></td> </tr> <tr> <td>1</td> <td>2 or more</td> </tr> </table>		Major Street	Minor Street	1	1	2 or more	1	<u>2 or more</u>	<u>2 or more</u>	1	2 or more	<table border="0"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>8,000</td> <td>5,600</td> </tr> <tr> <td>9,600</td> <td>6,720</td> </tr> <tr> <td>9,600</td> <td><u>6,720</u></td> </tr> <tr> <td>8,000</td> <td>5,600</td> </tr> </table>	Urban	Rural	8,000	5,600	9,600	6,720	9,600	<u>6,720</u>	8,000	5,600	<table border="0"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>2,400</td> <td>1,680</td> </tr> <tr> <td>2,400</td> <td>1,680</td> </tr> <tr> <td>3,200</td> <td><u>2,240</u></td> </tr> <tr> <td>3,200</td> <td>2,240</td> </tr> </table>	Urban	Rural	2,400	1,680	2,400	1,680	3,200	<u>2,240</u>	3,200	2,240
Major Street	Minor Street																																
1	1																																
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2. Interruption of Continuous Traffic Satisfied _____ Not Satisfied <u>X</u>		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)																													
Number of lanes for moving traffic on each approach <table border="0"> <tr> <th>Major Street</th> <th>Minor Street</th> </tr> <tr> <td>1</td> <td>1</td> </tr> <tr> <td>2 or more</td> <td>1</td> </tr> <tr> <td><u>2 or more</u></td> <td><u>2 or more</u></td> </tr> <tr> <td>1</td> <td>2 or more</td> </tr> </table>		Major Street	Minor Street	1	1	2 or more	1	<u>2 or more</u>	<u>2 or more</u>	1	2 or more	<table border="0"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>12,000</td> <td>8,400</td> </tr> <tr> <td>14,400</td> <td>10,080</td> </tr> <tr> <td>14,400</td> <td><u>10,080</u></td> </tr> <tr> <td>12,000</td> <td>8,400</td> </tr> </table>	Urban	Rural	12,000	8,400	14,400	10,080	14,400	<u>10,080</u>	12,000	8,400	<table border="0"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>1,200</td> <td>850</td> </tr> <tr> <td>1,200</td> <td>850</td> </tr> <tr> <td>1,600</td> <td><u>1,120</u></td> </tr> <tr> <td>1,600</td> <td>1,120</td> </tr> </table>	Urban	Rural	1,200	850	1,200	850	1,600	<u>1,120</u>	1,600	1,120
Major Street	Minor Street																																
1	1																																
2 or more	1																																
<u>2 or more</u>	<u>2 or more</u>																																
1	2 or more																																
Urban	Rural																																
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3. Combination Satisfied _____ Not Satisfied <u>X</u> No one warrant satisfied but following warrants fulfilled 80% or more: <u>NO</u> <u>NO</u> 1 2		2 Warrants		2 Warrants																													

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

EXIST + PROJECT + CABALLO HILLS

KELLER AT CAMPS

URBAN _____ RURAL <u>X</u>		Minimum Requirements EADT			
1. Minimum Vehicular		<u>KELLER</u>		<u>CAMPUS</u>	
Satisfied _____ Not Satisfied <u>X</u>		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)	
Number of lanes for moving traffic on each approach		<u>6500</u>		<u>2000</u>	
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	8,000	5,600	2,400	1,680
2 or more	1	9,600	<u>6,720</u>	2,400	<u>1,680</u>
<u>2 or more</u>	<u>2 or more</u>	9,600	<u>6,720</u>	3,200	<u>2,240</u>
1	2 or more	8,000	5,600	3,200	<u>2,240</u>
2. Interruption of Continuous Traffic		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)	
Satisfied _____ Not Satisfied <u>X</u>					
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1	1	12,000	8,400	1,200	850
2 or more	1	14,400	<u>10,080</u>	1,200	850
<u>2 or more</u>	<u>2 or more</u>	14,400	<u>10,080</u>	1,600	<u>1,120</u>
1	2 or more	12,000	8,400	1,600	<u>1,120</u>
3. Combination		2 Warrants		2 Warrants	
Satisfied _____ Not Satisfied <u>X</u>					
No one warrant satisfied but following warrants fulfilled 80% or more _____					
<u>YES</u> <u>NO</u>					
<u>1</u> <u>2</u>					

1/2 AOT

1220
750
—
1970

TRAFFIC SIGNAL WARRANTS

1990
Oak Hills Stables Quo

(Based on Estimated Average Daily Traffic - See Note 2)

KELLER AT CAMPUS

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

Figure 9-1C

TRAFFIC SIGNAL WARRANTS

(Based on Estimated Average Daily Traffic - See Note 2)

1990
50% Oak Hills Use Keller

KELLER AT CAMPUS

URBAN RURAL <u>X</u>		Minimum Requirements EADT			
1. Minimum Vehicular Satisfied <u>X</u> Not Satisfied _____ <hr/> Number of lanes for moving traffic on each approach <div style="display: flex; justify-content: space-between;"> <div> <p>Major Street</p> <p>1</p> <p>2 or more</p> <p><u>2 or more</u></p> <p>1</p> </div> <div> <p>Minor Street</p> <p>1</p> <p>1</p> <p><u>2 or more</u></p> <p>2 or more</p> </div> </div>		<u>KELLER</u> Vehicles per day on major street (total of both approaches) <u>8400</u>		<u>CAMPUS</u> Vehicles per day on higher-volume minor-street approach (one direction only) <u>3000</u>	
		Urban	Rural	Urban	Rural
		8,000	5,600	2,400	1,680
		9,600	6,720	2,400	1,680
		9,600	<u>6,720</u>	3,200	<u>2,240</u>
		8,000	5,600	3,200	2,240
2. Interruption of Continuous Traffic Satisfied _____ Not Satisfied <u>X</u> <hr/> Number of lanes for moving traffic on each approach <div style="display: flex; justify-content: space-between;"> <div> <p>Major Street</p> <p>1</p> <p>2 or more</p> <p><u>2 or more</u></p> <p>1</p> </div> <div> <p>Minor Street</p> <p>1</p> <p>1</p> <p><u>2 or more</u></p> <p>2 or more</p> </div> </div>		Vehicles per day on major street (total of both approaches)		Vehicles per day on higher-volume minor-street approach (one direction only)	
		Urban	Rural	Urban	Rural
		12,000	8,400	1,200	850
		14,400	10,080	1,200	850
		14,400	<u>10,080</u>	1,600	<u>1,120</u>
		12,000	8,400	1,600	1,120
3. Combination Satisfied <u>X</u> Not Satisfied _____ <hr/> No one warrant satisfied but following warrants fulfilled 80% or more..... <u>yes</u> <u>yes</u> <u>1</u> <u>2</u>		2 Warrants		2 Warrants	

NOTE:

1. Left turn movements from the major street may be included with minor street volumes if a separate signal phase is to be provided for the left-turn movement.
2. To be used only for NEW INTERSECTIONS or other locations where actual traffic volumes cannot be counted.

APPENDIX
APPROACH TRAFFIC WORKSHEETS

AM PEAK

Keller Avenue at 580 Off-Ramp

<u>Approach</u>	<u>Exist</u>	<u>1983-1990 Growth</u>	<u>Keller Avenue Project</u>	<u>Merritt</u>	<u>Caballo</u>	<u>1990 Total</u>	<u>Oak Knoll Keller Avenue 50%</u>	<u>Adjusted 1990 Total</u>
NB	X	X	X	X	X	X	X	X
SB	388	93	29	26	5	541	0	541
EB	157	38	11	9	2	217	0	217
WB	187	45	36	5	19	292	20	312
TOTAL	732	176	76	40	26	1,050		1,070

Keller Avenue at Mountain Boulevard

<u>Approach</u>	<u>Exist</u>	<u>1983-1990 Growth</u>	<u>Keller Avenue Project</u>	<u>Merritt</u>	<u>Caballo</u>	<u>1990 Total</u>	<u>Oak Knoll Keller Avenue 50%</u>	<u>Adjusted 1990 Total</u>
NB	360	86	10	142	27	625	230	855
SB	60	14	4	15	3	96	+0	96
EB	390	94	40	35	7	566	0	566
WB	382	92	139	18	148	779	81	860
TOTAL	1,192	286	193	210	185	2,066		2,377

Keller Avenue at Site/Oak Knoll

<u>Approach</u>	<u>Exist</u>	<u>1983-1990 Growth</u>	<u>Keller Avenue Project</u>	<u>Merritt</u>	<u>Caballo</u>	<u>1990 Total</u>	<u>Oak Knoll Keller Avenue 50%</u>	<u>Adjusted 1990 Total</u>
NB	20	5	2	0	0	27	81	108
SB	X	X	131	0	0	131	2	133
EB	184	44	54	192	37	511	230	741
WB	291	70	35	18	148	562	15	577
TOTAL	495	119	222	210	185	1,231		1,559

AM PEAK

Keller Avenue at Campus Drive

<u>Approach</u>	<u>Exist</u>	<u>1983-1990 Growth</u>	<u>Keller Avenue Project</u>	<u>Merritt</u>	<u>Caballo</u>	<u>1990 Total</u>	<u>Oak Knoll Keller Avenue 50%</u>	<u>Adjusted 1990 Total</u>
NB	X	X	X	X	X	X	X	X
SB	X	X	46	20	164	230	5	235
EB	68	16	56	192	37	369	5	374
WB	322	77	0	21	4	424	10	434
TOTAL	390	93	102	233	205	1,023	20	1,043

PM Peak

Keller Avenue at 580 Off-Ramp

<u>Approach</u>	<u>Exist</u>	<u>1983-1990 Growth</u>	<u>Keller Avenue Project</u>	<u>Merritt</u>	<u>Caballo</u>	<u>1990 Total</u>	<u>Oak Knoll Keller Avenue 50%</u>	<u>Adjusted 1990 Total</u>
NB	X	X	X	X	X	X	X	X
SB	487	117	67	6	71	748	69	817
EB	118	28	15	1	15	177	-0	177
WB	271	65	22	78	15	451	0	451
TOTAL	876	210	104	85	101	1,376	-	1,445

Keller Avenue at Mountain Boulevard

<u>Approach</u>	<u>Exist</u>	<u>1983-1990 Growth</u>	<u>Keller Avenue Project</u>	<u>Merritt</u>	<u>Caballo</u>	<u>1990 Total</u>	<u>Oak Knoll Keller Avenue 50%</u>	<u>Adjusted 1990 Total</u>
NB	556	133	44	4	46	783	-45	738
SB	106	25	16	1	16	164	9	173
EB	334	80	82	7	86	589	330	919
WB	218	52	105	98	73	546	69	615
TOTAL	1,214	290	247	110	221	2,082		2,445

PM PEAK

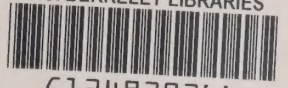
Keller Avenue at Site/Oak Knoll

<u>Approach</u>	<u>Exist</u>	<u>1983-1990 Growth</u>	<u>Keller Avenue Project</u>	<u>Merritt</u>	<u>Caballo</u>	<u>1990 Total</u>	<u>Oak Knoll Keller Avenue 50%</u>	<u>Adjusted 1990 Total</u>
NB	120	29	2	0	0	151	250	401
SB	X	X	71	0	0	71	0	71
EB	332	80	142	12	148	714	81	795
WB	133	32	67	98	73	403	24	427
TOTAL	<u>585</u>	<u>141</u>	<u>282</u>	<u>110</u>	<u>221</u>	<u>1,339</u>		<u>1,694</u>

Keller Avenue at Campus Drive

<u>Approach</u>	<u>Exist</u>	<u>1983-1990 Growth</u>	<u>Keller Avenue Project</u>	<u>Merritt</u>	<u>Caballo</u>	<u>1990 Total</u>	<u>Oak Knoll Keller Avenue 50%</u>	<u>Adjusted 1990 Total</u>
NB	X	X	X	X	X	X	X	X
SB	X	X	86	108	81	275	6	281
EB	346	83	44	12	148	632	41	673
WB	133	32	34	98	16	313	18	331
TOTAL	<u>479</u>	<u>115</u>	<u>164</u>	<u>218</u>	<u>245</u>	<u>1,220</u>		<u>1,285</u>

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